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## INSIDE DOPE

by GEORGE F. TAUBENECK

Story of the Week  
When Sales Counted  
And Let's Wake Up  
Freedom to Invent  
Where the Renaissance  
Came From  
Historic Parallels  
Give The Americas a Break  
South American Exporting  
Isn't a Simple Matter  
Meow

### Story of the Week

"Denny" Dennis, whose wholesaling business in the rugged Northwest is partially buttressed by the hunting parties he throws for big customers, is a breeder and fancier of good dogs.

When a party of manufacturing suppliers arrived at "Denny's" lodge for a week end of sport not long ago, "Denny" proudly trotted out the best canine retriever from his latest litter.

Promptly this pup "pointed" toward one of the guests.

Bro. Dennis's chagrin was something to behold.

"That's a smart dog," solaced the guest who had been "pointed" by the canine. "My last name is Partridge."

Four portly refugees from business headaches vacationed together, and succeeded wondrously in "forgetting it all."

After a five-day (and night) marathon of poker playing and whiskey-imbibing, the foursome decided—along about 3 a.m.—to try a sample of the "wholesome life." It seemed-like-a-good-idea-at-the-time that they should play 18 holes of golf on the morrow.

Next morning the four wobbly gentlemen floated out onto the nearest course.

As the first of the group—trembling and trying to focus his eyes—attempted to tee off, a huge, lop-eared dog rushed onto the green, dashed right between and on through the shaky gentleman's legs, and sped off across the fairway.

Simultaneously Our Hero calmly swung his club at what he guessed was the ball. Wham! Straight down the fairway onto the green it went—a beautiful 200-yard shot.

"Gosh, that was a wonderful drive," lauded his partner, "especially with that darned hound running between your legs just when you swung."

"Oh, Migawd!" croaked the whiskey-logged fellow, his knees buckling. "Was that a real dog?"

### When Sales Counted

Assigned to a southern territory, a new field man was ordered to take a trip with a veteran sales representative, and to watch his every move.

The latter died of a heart attack on the fourth day of this meant-to-be educational joint trip. The new salesman wired the home office for further instructions. Back they came:

"Remove orders from luggage and body, and return with sample kit. You're fired."

### And Let's Wake Up

Communism has been appeased, ignored, or laughed off universally for many decades. Most of us have been unwilling—or too lazy—to admit that this discredited and derided panacea-for-all-ills is a menace.

This failure on our part to recognize a mutual enemy—and to fight it—has led some of the brightest youngsters in the rising generation to believe that the victory of the Superstate is inevitable. And so they shrug their shoulders when they should brace them.

The Communists propagandize while we temporize.

(Concluded on Page 10, Column 1)

## How To Sell Home Freezers

This is the second part of a guest editorial on the home freezer market—and how to cultivate it profitably—by A. H. Rose. First part of this detailed analysis appeared in the Sept. 20 issue of the News. This concluding section can stand by itself, however, as first-rate advice to specialty dealers.)

### 5. Cooperative Advertising Plans

Use regularly your cooperative advertising funds to publicize home freezers and special promotional plans. Don't overlook food and home shows, county and state fairs, and other public events to demonstrate and advertise home freezers. Dealers' local advertising programs which can be tied in with manufacturers' national advertising programs will produce plus results.

### 6. Daily Telephone Canvass Calls to at Least 10 New Prospects

Dealers should set up a system whereby they make at least 10 canvass calls by telephone every day. These can be people that are already prospects or strangers who live in the dealer's trading area. Getting the names of people who live in the dealer's trade area should represent no problem at all. Telephone books, city directories, prospect file, old customer list, etc. are all good sources for finding people to contact by telephone.

It is surprising how many sales result from telephone canvass calls.

### 7. "Blind" Newspaper Advertisements to Bargain Hunters

Many dealers have run advertisements in the classified want ad  
(Concluded on Page 14)

## Progress Reported Congress May Aid On Rating Standard Salesmen Benefits For Milk Coolers

NEW YORK CITY—Extensions of items deductible from a salesman's tax return and provision of termination pay for salesmen are two proposals which the National Council of Salesmen's Organizations plans to submit for consideration by Congress next year.

This was revealed in an interview with Dr. Derso Sebeok Shybekay of the University of Minnesota, newly appointed Northwest regional representative of the National Council, at the Council's offices at 80 West Fortieth St. here.

Dr. Shybekay, author of many books on industrial management and market research, will direct the Council's activities in 10 states—Illinois, Indiana, Iowa, Ohio, Michigan, Minnesota, Wisconsin, North and South Dakota, and Nebraska, it was announced by Louis Capaldo, Council president.

Discussing the legislative proposals considered, Dr. Shybekay used the example of the salesman's use of an automobile in his work in the matter of extension of items deductible from a salesman's tax return.

"A salesman actually has a capital investment in the automobile he uses

(Concluded on Page 4, Column 2)

## Taft-Hartley Act Is Applied to Retailer

SAN PEDRO, Calif.—Even though a retail store sells its merchandise within the bounds of a single state and buys most of its goods within the same state, it is still considered to be in interstate commerce and subject to the Taft-Hartley Act if the goods purchased in the state were manufactured beyond its borders.

That seems to be the effect of a recent finding by trial examiners of the National Labor Relations Board in the case of a local dealer in photography supplies and greeting cards.

In the same case, the trial examiners also found that a union is not committing an unfair labor practice by insisting on a closed shop if it believes in good faith that the employer is not in interstate commerce.

The dealer in this case, H. W. Smith, doing business as A-1 Photo Service, appealed to the board against "unfair labor practices" on the part of Local 905 of the Retail Clerks International Association (AFL).

He contended that he was within the jurisdiction of the board because

(Concluded on Page 4, Column 3)

### NCRSA Will Meet Oct. 7-8

The National Commercial Refrigerator Sales Association will meet at the Penn Sheraton hotel in Philadelphia, Oct. 7-8. In the Sept. 20 issue of the NEWS there appeared a story that dates for the meeting had been shifted. This, we are informed, was in error.

## Interpretation of New Credit Control Keeps It 'Tight'

WASHINGTON, D. C.—"Interpretations" of the new Regulation W, which clamps credit curbs on the sale of many major appliances, are already being issued by the Federal Reserve Board, administrator of the regulation.

In recent announcements, the FRB has pointed out that all rulings under the old Regulation W that were in force after Dec. 1, 1946 are still applicable. It also noted that "pre-trials" of appliances by customers are prohibited. Opinions have been expressed that purchase-rental agreements are outlawed.

On the status of agreements that were made just prior to Sept. 20, effective date of the new regulation, and which might be affected by the regulation (for instance, in cases where delivery was made after Sept. 20), an FRB official said that individual rulings would have to be made in each case, depending on the particular circumstances involved.

Another FRB official asserted that all "bona fide" sales made before Sept. 20 but in which the merchandise was delivered after that date would not be affected by the regulation.

He described a bona fide sale as one in which the article purchased is clearly identified as to make, model, and general characteristics. Listing of serial numbers is not necessary, he declared.

The new Regulation W applies to such major appliances as refrigerators, domestic ranges, dishwashers,

(Concluded on Page 25, Column 1)

## Service Conference In Boston Oct. 8-10 May Attract 3,000

PITTSBURGH—Three thousand refrigeration service engineers, wholesalers, contractors, and dealers are expected to attend the First Eastern Refrigeration and Air Conditioning Exhibit and Conference to be held at the Bradford hotel in Boston, Oct. 8, 9, and 10.

Educational exhibits by more than 80 manufacturers are expected in this conference which is being jointly sponsored by the Refrigeration Equipment Manufacturers Association and the Refrigeration Service Engineers Society.

Exhibits will consist of working models, cut-away models, sectional drawings, motion pictures, slide films, etc., with refrigeration experts from all parts of the country on hand to answer questions.

Exhibits will be open from 2 to 10 p.m. on Friday, Oct. 8; from noon to 10 p.m. on Saturday, Oct. 9; and from 10 a.m. to 3 p.m. on Sunday, Oct. 10.

A special program of technical

(Concluded on Page 4, Column 4)

## Siegfried, of Superior, Elected REMA Secretary

PITTSBURGH—W. A. Siegfried, president of Superior Valve & Fittings Co., has been elected secretary of Refrigeration Equipment Manufacturers Association (REMA) to fill the unexpired term of G. M. Kingsland of Minneapolis-Honeywell Regulator Co., who resigned because of a change in his business affiliations from the refrigeration to the stoker field.

Siegfried is a member of the REMA board of directors, and has been active on a number of the association's committees.

## G-E Ups Prices On Some Models In Major Lines

### Five Out of Eight Refrigerator Models Have Higher List

BRIDGEPORT, Conn.—Price increases on some General Electric refrigerators and other major appliance models have been announced by C. R. Pritchard, manager of marketing of the company's Appliance and Merchandise Department.

Appliances affected include several models of refrigerators, ranges, water heaters, the automatic washer, and dryer. All increases are now in effect except on the automatic washer, which becomes effective Oct. 1.

According to Pritchard, the increases were necessitated by and reflect only the recent increases in costs of components, materials, and freight.

Price increases on refrigerator models run from 3.7% to 5.7%. Average increase on the refrigerator line is 2.4%; on the range line, 3.9%; and on the water heater line, 2.3%.

Following are the new prices as compared with those previously in effect:

REFRIGERATORS		
Model No.	New Price	Old Price
NB-4-D	\$232.00	\$232.00
NC-6-E	216.00	216.00
NB-8-E	259.00	245.00
NC-8-E	279.00	269.00
NF-8-E	329.00	315.00
NH-8-E	410.00	410.00
NB-10-E	329.00	315.00
NF-10-E	364.00	349.00

RANGES		
Model, Model No.	New Price	Old Price
Studio, AP1-48A8	\$169.95	\$159.95
Leader, CT1-48A9	204.95	189.95
Airliner, CD1-48A9	289.95	274.95
Speedster, DD1-F1	299.95	(new)
Stratoliner, DD2-F1	369.95	"
Liberator, ED1-F1	399.95	"

WATER HEATERS		
Model No.	New Price	Old Price
EG-15-1	\$ 99.95	\$ 99.95
30-7T1	143.95	141.95
30-1	126.95	124.95
30-2	134.95	132.95
40-7	151.95	146.95
40-8	159.95	154.95
40-1	139.95	135.95
40-2	147.95	143.95
52-1	151.95	146.95
52-2	159.95	154.95
66-1	171.95	169.95
66-2	179.95	177.95
82-1	191.95	191.95
82-2	199.95	199.95

AUTOMATIC WASHER		
AW-6	\$369.95	\$349.75

DRYER	\$249.95	\$229.75
AD-6	\$249.95	\$229.75

## Washington Convention Agenda Set by Leagues

# NATIONAL CHAMPIONS

It takes more than strength to make a good hitter, and it takes more than good looks to make a fine cooler. National Cooler's CHAMPION Dry Beverage Cooler has everything . . . appearance, construction and performance.



## NATIONAL CHAMPION

A ballplayer has to have continuous top-notch performance to rank among such diamond greats as Babe Ruth and Ted Williams. And it's that same everyday perfection that makes National Cooler's CHAMPION such a favorite with beverage men everywhere. It's truly a great cooler!

Write today for the new 1949 catalog of National Dry Coolers and Stainless Steel Restaurant Equipment.

- ALL STAINLESS STEEL EXTERIOR (EXCEPT BACK)
- EASY SLIDE-UP DOORS
- AUTOMATIC LIGHTING
- REMOVABLE PARTITIONS
- REINFORCED STRUCTURE
- FOUR SIZES

Manufacturers of Stainless Steel and Metal Restaurant Equipment

## NATIONAL COOLER CORPORATION

1600 WOODLAND AVENUE

CLEVELAND 15, OHIO



## Distributor Draws Dealers To Appliance Exhibit by Offer of Transportation

NEW ORLEANS — Approximately 600 dealers from Louisiana, Mississippi, and Alabama previewed the 1949 electric and gas appliance lines of United Distributors, Inc., here, during the company's first annual "Winter Merchandise Show and Sales Clinic."

The show, held Aug. 23-25 in United's air conditioned showroom, was the first of its kind to be staged by any distributor in this area, according to Al Levin, vice president. Levin described the event as "an outstanding success."

"Sales clinic demonstrations of all major appliance lines served to train the dealers and their salesmen in better selling methods," he said.

A feature of the show was a special preview of the 1949 Majestic "Super-Hit" line. The line was introduced personally by E. A. Tracey, president of Majestic Radio Corp.

One of the drawing cards was United's offer to pay round trip transportation to New Orleans for one or two representatives up to 5% of their purchases during the show. Others included 10 registration prizes, free record albums to those presenting registration cards, and special dating of show orders (payable Oct. 10).

The showroom was open until 9 p.m. the first two days. Hours the last day were from 8 a.m. through 5 p.m.

O. G. H. Rasch is president of the distributorship.

## Cooler Holds Carload of Frozen Foods



This Reco freeze cooler was erected in 16 hours.

## Pre-Fab Unit To Help N.Y. Firm Distribute Goods

## Detroit Dealers Term Modern Refrigerated Milk Handling a 'Duty'

DETROIT—Handling milk through modern refrigeration equipment is the "duty" of every retail grocery, the Detroit Milk Dealers, Inc. recently reminded Michigan grocers through an advertisement in their trade journal, *The Grocer's Spotlight*.

The advertisement, titled "A message to the grocers: Our common duty to the consuming public," read as follows:

"At this time of the year, when children go back to school, milk and milk products become even more important in their daily diet.

"Our responsibility is to place in your grocery store, milk and milk products fresh from the farm, processed through the most modern and scientifically equipped plants possible, and conveyed to your store in the latest of delivery equipment and at the hands of good intelligent service-salesmen.

"Your responsibility is to handle that milk through modern refrigeration which preserves its freshness and wholesomeness and to pass it on to the consuming public.

"The bottle of milk that you sell in your store is one of the best traffic builders for volume and profit. The public looks to both of us, the milk man and the grocer, for efficient intelligent service in supplying them with milk and milk products.

"We are doing our part—we know we can count on you to do your part."

## J. M. Baker Promoted to Factory Mgr. of Motor Products Corp.

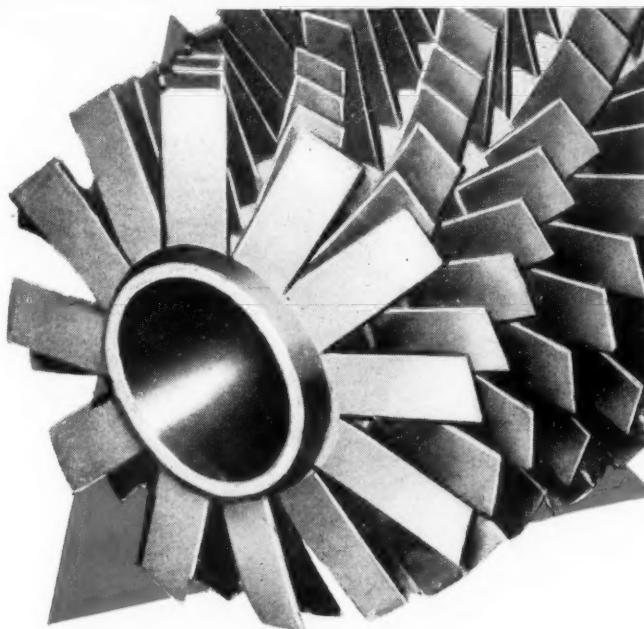
NORTH CHICAGO, Ill.—James M. Baker, Deepfreeze factory manager, has been named factory manager for Motor Products Corp., Detroit, the parent company of Deepfreeze.

Baker will have full charge of the factories of the main plant, it is reported.

Seth R. Miller, present master mechanic at the Detroit plant, has been named factory manager of the Deepfreeze Division. Miller was factory superintendent and master mechanic at Deepfreeze before going to the plant in Detroit.

## Equipment Export Still Drops

WASHINGTON D. C.—Air conditioning and refrigerating equipment and parts shipped abroad in June by U. S. manufacturers had a value of \$4,657,034, compared with \$5,222,645 in May and \$5,794,510 in April, according to the Bureau of Census statistics.



engineers

select

## TILCO FIN TUBING

for

Blast Coils, Cooling Coils, Unit Heaters, Direct Expansion Refrigeration Units, Central Plant Heating and Cooling Systems, Condenser Tubes, Evaporator Tubes, Air Conditioning and Dehydration Units and Systems, and for many other types of heating or cooling equipment

because

### HIGH PERFORMANCE

results from the segmented fin design and the Metallic Bond

### FLEXIBLE APPLICATION

Steel fins can be welded to Steel tubes

Mono-fins can be welded to Steel tubes

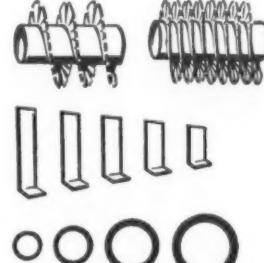
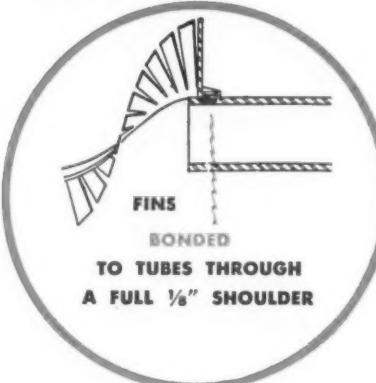
Steel fins can be welded to Cupro-nickel

Copper fins can be solder bonded to Copper tubes

Fins may be spaced as wide as three rows per inch or as close as eight rows per inch

Fins may be any desired height starting with  $\frac{1}{4}$ "

Tubes can be as small as  $\frac{3}{8}$ " in diameter or as large as 6" in diameter



LOW PRESSURE DROP results from thin fins and clear passage over the fins

DAVID E. KENNEDY, INC.  
TILCO-FIN TUBING  
58 Second Ave., Brooklyn 15, N. Y.

Suitable designs of narrow strip fins ( $\frac{1}{8}$ " wide) provide an increase of over 2 to 1 ratio in the heat transfer coefficient compared to continuous fins.

**Wall WIRE PRODUCTS COMPANY**  
**W**  
PLYMOUTH • MICHIGAN  
Makers of  
REFRIGERATOR SHELVES • STAMPINGS  
FORMED AND WELDED PRODUCTS

Who has not heard the housewife remarking with pride of the Stainless Steel Shelves in her refrigerator.

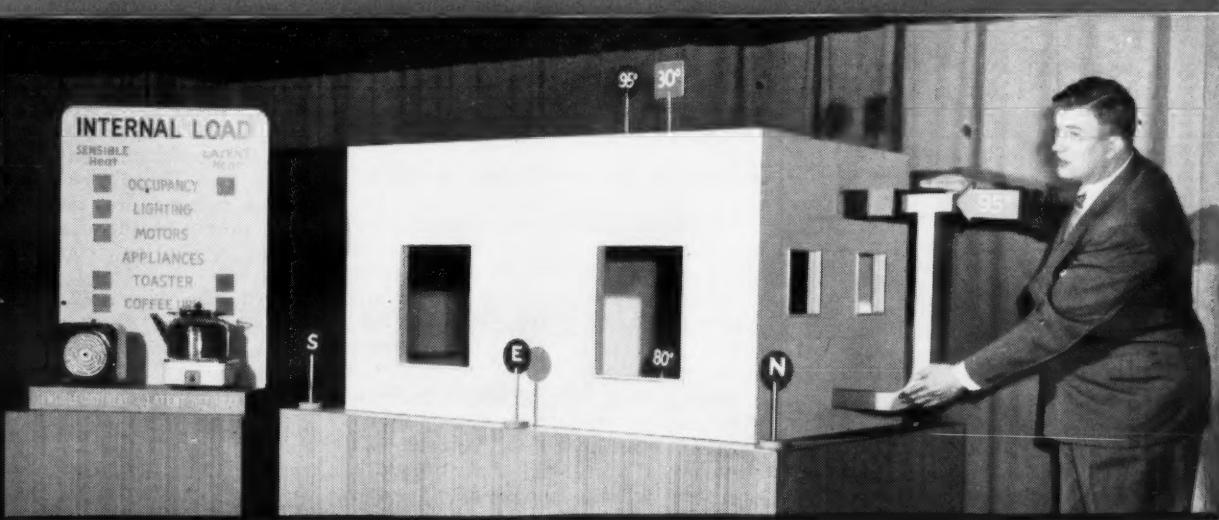


**BASIC REFRIGERATION PRINCIPLES** are easy to grasp when Assistant School Director Ralph Blakelock demonstrates them with these simple devices. Scores of visual training aids are employed in the two-week school—everything from a rubber balloon to a huge compressor.

"SIMPLEST REFRIGERATING MECHANISM EVER BUILT," says R. C. Lewis, Assistant Sales Training Manager and Director of the Commercial School, as he explains the operation of the Commercial Meter-Miser. A huge, animated cutaway gets his points over quickly and graphically.



**HOW TO ESTIMATE AN AIR CONDITIONING INSTALLATION.** Model buildings dramatize this section of the course in which the salesmen learn to estimate air conditioning needs. Students help work out the problems step by step. In this way they learn the practice as well as the theory of this important part of their jobs.



## WHAT FRIGIDAIRE SALES TRAINING LEADERSHIP MEANS TO FRIGIDAIRE COMMERCIAL DEALERS

The continuous, comprehensive Frigidaire Sales Training Program is one of the most valuable assets available to Frigidaire Commercial and Air Conditioning Dealers.

Now, in addition to field schools, sales manuals and other self-training helps, a continuing, intensive, two-week Frigidaire factory course is available to train salesmen in every phase of good salesmanship. This course, conducted by 18 factory specialists, thoroughly covers product features and their application. Even more important, the principles of pro-

fessional salesmanship are presented from the standpoint of *what* to do and *how* to do it. And, through class participation, students gain the knowledge and confidence that comes with actual experience.

In these ways, a Frigidaire Commercial Dealer can more quickly and easily develop the hard-hitting sales force he must have to win leadership in his own market.

That's profit insurance of a mighty practical kind. And it's only one of many ways in which Frigidaire leadership is helping build better business for Frigidaire Commercial Dealers.

**BETTER SALES TRAINING MEANS BETTER SALES VOLUME FOR FRIGIDAIRE COMMERCIAL DEALERS**



You're twice as sure with two great names

**FRIGIDAIRE** made only by **GENERAL MOTORS**

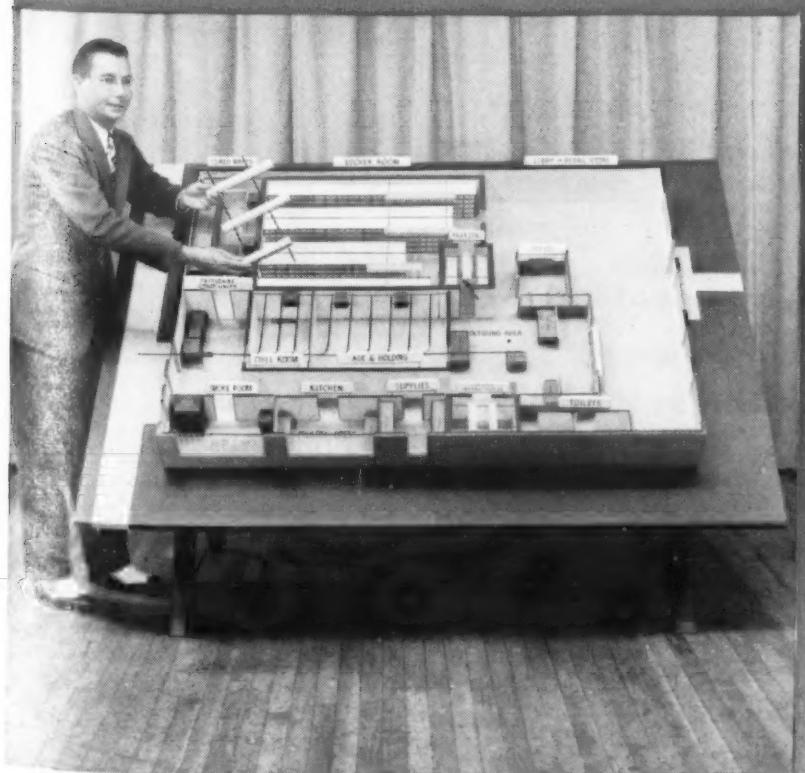


**MARKET OPPORTUNITIES** in the commercial and air conditioning fields and the broad coverage provided by Frigidaire products in businesses of all types are discussed by W. F. Switzer, Commercial Sales Manager.

**APPLICATION OF COMMERCIAL EQUIPMENT.** How and where to apply Frigidaire equipment to all types of commercial applications is taught through visual training devices. For example, this cross-section of a model locker plant is built up and its refrigeration requirements analyzed step by step before the eyes of students.

**PRACTICE SESSIONS.** Students learn best ways of demonstrating products and answering objections by "pairing off" as prospect and salesman. By school's end, students are prepared to do a good selling job on all Frigidaire Commercial Refrigeration and Air Conditioning Equipment.

"**GREAT ENGINEERING AND SUPERIOR MANUFACTURING** give you better products to sell," says C. S. Trigg, Frigidaire Sales Training Manager. He proves it by demonstrating the sales advantages found in all Frigidaire products. Students also see Frigidaire engineering and modern production in action.



**WANTED:****Sales Engineer-Refrigeration**

For Chicago Area calling on Jobbers and Manufacturers. Job worth \$10,000 a year. Our men know of this ad.

Box 2949, Air Conditioning & Refrigeration News

**SWIFT****Pulleys and Fan Blades****Industrial & Variable****Speed Pulleys**

Standard equipment with most refrigeration unit manufacturers. Sold By All Better Jobbers

**Swift Manufacturing, Inc.**  
247 McDougal  
Detroit 7, Michigan

**Salesmen Benefits--**

(Concluded from Page 1, Column 3) in his business," he said. "He also pays an abnormal share of the excise on travel rates. These are not part of his general living expenses and should be deductible as allowable expenditures of doing business.

"The second proposal is for provision of termination pay for a salesman dismissed after a period of years from his position. The new government in Britain put such a plan into effect among its first acts.

"A salesman who has built up a territory over a period of years should be entitled to more than a curt dismissal note. The principle of severance pay is generally accepted as a principle of fair practice today and the salesman should be entitled to conditions as fair as obtain in the next trade or profession."

**Firm Appointed To Distribute Harvester In 4 States, Alaska**

SEATTLE—Effective Sept. 1, Harper-Meggee, Inc., here became the wholesale distributor in the Pacific northwest for refrigerators and home freezers manufactured by International Harvester Co., the former announced.

Harper-Meggee's territory includes Washington, Oregon, northern Idaho, western Montana, and Alaska. To serve this area, the distributorship operates warehouses and offices in Seattle, Portland, and Spokane.

J. E. Gollihir, sales manager, and William Shearer, manager of the refrigeration department, are in charge of sales in the Seattle area.

**Taft-Hartley Act--**

(Concluded from Page 1, Column 3) a substantial part of his supplies were transported and delivered to him in interstate commerce.

He charged that the union had refused to bargain collectively and had sought to compel him to establish and maintain a closed shop.

The union, however, contested the jurisdiction of the board on the ground that the employer was not engaged in interstate commerce.

It argued that the "business operated by the employer is purely a local, retail enterprise, employing only three clerks, and that labor disputes involving his employees would not have such a direct and substantial effect upon interstate commerce as to be cognizable under the (Taft-Hartley) Act."

The NLRB trial examiners found that while all but \$600 of the dealer's sales were made within California, 44% of his supplies were purchased outside the state. In addition, they found that "a substantial proportion of the merchandise delivered to him from points within the State of California originates from outside that State."

Therefore, they decided, "the operation of such a business involves and affects interstate commerce to such an extent as to bring it under the jurisdiction of the board."

They also decided that, as the case did come under the Taft-Hartley Act, the refusal to bargain collectively was an unfair trade practice. But they recommended that "the complaint be dismissed insofar as it alleges that the (union's) insistence upon a closed-shop contract constituted a violation of (the Act)."

**Boston Conference--**

(Concluded from Page 1, Column 4) meetings, to be addressed by refrigeration experts, is being arranged by the New England Chapter of the Refrigeration Service Engineers Society. These technical meetings will be held on Saturday and Sunday mornings, Oct. 9 and 10, and will be augmented by a series of educational motion pictures.

Speakers contracted for to date include Dr. Walter O. Walker, Ansul Chemical Co. on "Driers"; George Schuld, International Safety Director of the Refrigeration Service Engineers Society, who will speak on "Refrigeration Safety Hazards"; L. W. Larsen of Tecumseh Products Co., whose subject will be "Design and Servicing of High Speed Compressors"; and Robert T. Moore, chief engineer, Superior Valve & Fittings Co., speaking on "The Safe Handling of Refrigeration Gases."

The conference is open to the entire refrigeration and allied industries. All interested men are invited to attend.

Hotel reservations are being handled by James A. McCue, chairman of the housing committee, 801 Beacon St., Boston. All reservations will be confirmed by the hotels.

The New England Chapter of the Refrigeration Service Engineers Society, will be host to the convention.

Members of the New England Chapter in charge of arrangements include:

John J. Madden, Dedham, Mass., general chairman; Lee Wallace, New Haven, Conn., assist general chairman; Chas. C. E. Harris, Cambridge, Mass., coordinator; Arthur W. Andreen, E. Hartford, Conn., arrangements; James A. McCue, Boston, housing.

Members of the Educational Committee of the Refrigeration Equipment Manufacturers are: H. F. Speehrer, Sporan Valve Co., chairman; K. B. Thorndike, Detroit Lubricator Co.; J. M. Schlemmer, General Controls Co.; E. M. Flannery, Bush Mfg. Co.; H. F. Hildreth, Westinghouse Electric Corp.; and G. E. Graff, Ranco Inc. R. K. Hanson of Pittsburgh is exhibit manager.

**More Oil May Help Burner Sales Surpass 1948 Quota**

NEW YORK CITY—Oil burner manufacturers expect to sell 300,000 units during the last six months of 1948—a much higher figure than had been anticipated, W. A. Matheson, an officer of the Oil Heat Institute, declared recently.

Matheson attributed the upsurge in demand for oil burners to news just reaching the public that refineries are turning out increased supplies of oil.

As a result of this added demand and to avert any shortage of fuel oil storage tanks this winter, he said that the institute is asking the Office of Industry Cooperation to increase allocations of steel for fuel-oil tank manufacturing.

Matheson also pointed out that statistics covering sales for the first six months of the year show a definite shift in the use of oil burners.

Conversion burner units, he noted, still comprise a majority of national sales, but decreased from 73.5% of total sales last year to 60% for the first half of this year.

Oil burners used in furnace heating units rose from 14.3% last year to 19.6% this year. Boiler burner units rose from 4% last year to 7.8% this year. Industrial and commercial burners were up from 4.1% to 8.2%.

Water heating units dropped from 5.1% to 4.4%.

**Raymond Patten, G-E Design Pioneer, Dies**

BRIDGEPORT, Conn.—Raymond E. Patten, director of design of the General Electric Co.'s appearance design division and one of the nation's foremost industrial designers, died here earlier this month. He was 51.

Patten had been associated with the electrical industry since 1928, and with General Electric since 1930, when he was named head of the design and planning department of the company's Kitchen Institute. He was responsible for the appearance design of G-E refrigerators, ranges, laundry equipment, radios, and other appliances.

**List of Exhibitors For Boston**

Company	Booth No.
Ace Cabinet Corp.	B-44
Acme Industries, Inc.	B-8
Airserco Mfg. Co., Inc.	B-6
Alco Valve Co.	B-28
Aminco Refrigeration Products Co.	B-20
Ansul Chemical Co.	S-73
Automatic Products Co.	B-3
Brunner Mfg. Co.	B-2
Bundy Tubing Co.	B-45
Bush Mfg. Co.	B-24
Chicago Seal Co.	B-14
Colbar, Inc.	S-65
Coolstream Corp.	S-79
Coopeland Refrigeration Corp.	B-36
Curtis Refrigerating Machine Div.	S-83
Davison Chemical Corp., The	B-5
Dayton Rubber Co., The	S-62
Detroit Lubricator Co.	S-80
Dole Refrigerating Co.	S-63
Ebclo Mfg. Co., The	B-26
Electromatic Div.	B-46
Fogel Refrigerator Co.	B-4
General Controls Co.	S-68
General Electric Co.	B-43
Gilmer Co., L. H.	S-52
Grand Rapids Brass Co.	S-69
Halsey & Mitchell	S-56
Heat-X-Changer Co., Inc.	B-37
Hedeman Products, Inc.	B-30
Henry Valve Co.	B-49
Highside Chemicals Co.	B-22
Imperial Brass Mfg. Co., The	S-55
Jarrow Products	S-67
Kason Hardware Corp.	B-15
Kerotest Mfg. Co.	S-76
Kold-Hold Mfg. Co.	B-11
Kramer Trenton Co.	S-66
Lehigh Mfg. Co.	S-64
Lynch Corp.	S-74
McIntire Connector Co.	S-71
Mills Industries, Inc.	B-40
Minneapolis Show Case & Fixture Co.	S-58
Mitchell Mfg. Co.	B-47
Mueller Brass Co.	S-59
Nash-Kelvinator Corp.	B-10
National Production & Sales, Inc.	B-48
Ranco Inc.	B-39
Remco, Inc.	S-57
Servel, Inc.	S-61
Smith Corp., A. O.	B-29
Spencer Thermostat Co.	B-12
Sporlan Valve Co.	B-7
Standard Refrigeration Co.	B-13
Sun Oil Co.	B-23
Superior Valve & Fittings Co.	B-25
Tecumseh Products Co.	B-21
Temprite Products Corp.	S-70
Tenney Engineering, Inc.	S-82
Torrington Mfg. Co., The	S-75
Tyler Fixture Corp.	B-38
Typhoon Air Conditioning Co., Inc.	S-72
United Cork Companies	B-27
Virginia Smelting Co.	S-81
Wabash Mfg. Co.	S-53
Weatherhead Co., The	B-41
Westinghouse Electric Corp.	S-54
Wolverine Tube Div.	B-31

**Coolerator Names APC Factory Service Agent In New York City**

NEW YORK CITY—Appliance Production Corp. here has recently announced its appointment as direct factory service representative for Coolerator refrigerators and freezers for the Metropolitan area.



If you are using plated castings or one-piece stampings for grille work, louvres, decorative trim, etc., Greene Moulding Assemblies can mean real savings for you. With them you get

- Lower cost per unit
- Equal or greater strength
- Reduced weight
- Economical repair or replacement
- High quality appearance

**CLIP AND MAIL TODAY**

Greene Manufacturing Co., Inc.  
1028 Douglas Ave., RACINE, WISCONSIN

- Please supply me with complete information on savings possible with Greene Moulding Assemblies
- I am attaching blue prints and specifications for quotes

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

WRITE FOR  
BULLETIN R147

**KRAMER TRENTON CO. Trenton 5 N. J.**

**Salesmen Benefits--**

(Concluded from Page 1, Column 3) in his business," he said. "He also pays an abnormal share of the excise on travel rates. These are not part of his general living expenses and should be deductible as allowable expenditures of doing business.

"The second proposal is for provision of termination pay for a salesman dismissed after a period of years from his position. The new government in Britain put such a plan into effect among its first acts.

"A salesman who has built up a territory over a period of years should be entitled to more than a curt dismissal note. The principle of severance pay is generally accepted as a principle of fair practice today and the salesman should be entitled to conditions as fair as obtain in the next trade or profession."

**Firm Appointed To Distribute Harvester In 4 States, Alaska**

SEATTLE—Effective Sept. 1, Harper-Meggee, Inc., here became the wholesale distributor in the Pacific northwest for refrigerators and home freezers manufactured by International Harvester Co., the former announced.

Harper-Meggee's territory includes Washington, Oregon, northern Idaho, western Montana, and Alaska. To serve this area, the distributorship operates warehouses and offices in Seattle, Portland, and Spokane.

J. E. Gollihir, sales manager, and William Shearer, manager of the refrigeration department, are in charge of sales in the Seattle area.

**Taft-Hartley Act--**

(Concluded from Page 1, Column 3) a substantial part of his supplies were transported and delivered to him in interstate commerce.

He charged that the union had refused to bargain collectively and had sought to compel him to establish and maintain a closed shop.

The union, however, contested the jurisdiction of the board on the ground that the employer was not engaged in interstate commerce.

It argued that the "business operated by the employer is purely a local, retail enterprise, employing only three clerks, and that labor disputes involving his employees would not have such a direct and substantial effect upon interstate commerce as to be cognizable under the (Taft-Hartley) Act."

The NLRB trial examiners found that while all but \$600 of the dealer's sales were made within California, 44% of his supplies were purchased outside the state. In addition, they found that "a substantial proportion of the merchandise delivered to him from points within the State of California originates from outside that State."

Therefore, they decided, "the operation of such a business involves and affects interstate commerce to such an extent as to bring it under the jurisdiction of the board."

They also decided that, as the case did come under the Taft-Hartley Act, the refusal to bargain collectively was an unfair trade practice. But they recommended that "the complaint be dismissed insofar as it alleges that the (union's) insistence upon a closed-shop contract constituted a violation of (the Act)."

**Boston Conference--**

(Concluded from Page 1, Column 4) meetings, to be addressed by refrigeration experts, is being arranged by the New England Chapter of the Refrigeration Service Engineers Society. These technical meetings will be held on Saturday and Sunday mornings, Oct. 9 and 10, and will be augmented by a series of educational motion pictures.

Speakers contracted for to date include Dr. Walter O. Walker, Ansul Chemical Co. on "Driers"; George Schuld, International Safety Director of the Refrigeration Service Engineers Society, who will speak on "Refrigeration Safety Hazards"; L. W. Larsen of Tecumseh Products Co., whose subject will be "Design and Servicing of High Speed Compressors"; and Robert T. Moore, chief engineer, Superior Valve & Fittings Co., speaking on "The Safe Handling of Refrigeration Gases."

The conference is open to the entire refrigeration and allied industries. All interested men are invited to attend.

Hotel reservations are being handled by James A. McCue, chairman of the housing committee, 801 Beacon St., Boston. All reservations will be confirmed by the hotels.

The New England Chapter of the Refrigeration Service Engineers Society, will be host to the convention.

Members of the New England Chapter in charge of arrangements include:

John J. Madden, Dedham, Mass., general chairman; Lee Wallace, New Haven, Conn., assist general chairman; Chas. C. E. Harris, Cambridge, Mass., coordinator; Arthur W. Andreen, E. Hartford, Conn., arrangements; James A. McCue, Boston, housing.

Members of the Educational Committee of the Refrigeration Equipment Manufacturers are: H. F. Speehrer, Sporan Valve Co., chairman; K. B. Thorndike, Detroit Lubricator Co.; J. M. Schlemmer, General Controls Co.; E. M. Flannery, Bush Mfg. Co.; H. F. Hildreth, Westinghouse Electric Corp.; and G. E. Graff, Ranco Inc. R. K. Hanson of Pittsburgh is exhibit manager.

**More Oil May Help Burner Sales Surpass 1948 Quota**

NEW YORK CITY—Oil burner manufacturers expect to sell 300,000 units during the last six months of 1948—a much higher figure than had been anticipated, W. A. Matheson, an officer of the Oil Heat Institute, declared recently.



# FEEL FIT AS A KITTEN

*In Air-conditioned comfort*

**You'll Make More Money and Build  
a Bigger Business by Using and  
Selling Nevinger Air Conditioning  
Units**

**An Open Letter to Ambitious Specialty  
Appliance Dealers:**

Are you interested in making more money? Do you want to build your stature in your community? Are you more interested in long-range opportunities than short-term deals? If you are, you should investigate the C. A. Nevinger "packaged air conditioning" franchise.

In our previous advertisements in AIR CONDITIONING & REFRIGERATION NEWS we have outlined and detailed the manifold markets for the air conditioning units we produce. We have also tried to point out how *our* dealers can cultivate these panting markets profitably.

And now we peel off our dark glasses and open-facedly suggest that YOU, Mr. Specialty Appliance Dealer, solicit a dealership franchise for C. A. Nevinger air conditioning units. There's money—*big money*—in it *for you*.

Nevinger air conditioners are made in all wanted sizes. They're *the best*, too, as the most critical users in the world will testify. The bulk of our production to date has been distributed to torrid countries (like India, South and Central America, and the East Indies). Air conditioning units in these superheated zones take an awful beating. Ours stand up over there, under the worst of conditions.

That's why we can claim that no line of "packaged" air conditioning units marketed today is more soundly engineered or conscientiously constructed as those produced by:

# The C. A. NEVINGER CO.

GREENVILLE, ILLINOIS

P.S.: Try one in your office. Feel "fit as a kitten" as you work in air-conditioned comfort. Then you'll sell them enthusiastically.

*Nevinger Air Conditioners  
are "Powered for the Tropics."*



## SALES ENGINEERS

General Electric, Tyler and Harderfreez commercial refrigeration distributor has openings for sales engineers with top sales experience selling to markets, cafes, industries, etc. Also experienced chainstore equipment salesmen. California large population influx provides excellent year round sales opportunities for high caliber men. If you plan to move to California, fit the above specifications, like protected territories and liberal percentages, write

PERFECOLD, 1940 So. Main St., Los Angeles 7

### SCHNACKE

#### COMPRESSORS AND CONDENSING UNITS

##### Now Available with THERMATROL CAPACITY CONTROL

- 1-Improves Refrigeration System Efficiency
- 2-Eliminates Unnecessary Cycling
- 3-Reduces Electric Current Consumption

These are some of the "plus" advantages now available in all SCHNACKE improved Compressors and complete Condensing Units.

For long wear and greater operating efficiency, SCHNACKE Compressors have replaceable, refrigerant-cooled steel cylinder sleeves, balanced forged crankshaft, sealed crankcase, positive pressure lubrication, and many other advanced features. Compressor models available from 5 to 50 H.P.

SCHNACKE Condensing Units are complete with cleanable type fin tube condensers mounted in sturdy base, water control valve and pressure controls. Models available from 5 to 25 H.P.

Write SCHNACKE, INC., 1016 E. Columbia St., Evansville, Indiana, for engineering details.

**SCHNACKE, INC.**



## Donald Succeeds Foy As Jahco President

CLEVELAND—Kenneth G. Donald has been elected president of Jack & Heintz Precision Industries, Inc. here, succeeding Byron C. Foy who resigned as president and chairman of the board, the latter position being abolished.

Donald is, and will continue as, a vice president of Robert Heller & Associates, Cleveland, a nationally known management engineering firm. In addition, he has been serving as general manager of Jack & Heintz for the past several months.

Prior to joining Robert Heller & Associates in 1936, Donald was comptroller of the Royal Baking Powder Co. and the Forstmann Woolen Co. He is a graduate of Harvard university and the Harvard Graduate School of Business Administration.

Foy, who is continuing as a director of Jack & Heintz Precision Industries, Inc., stated in his letter of resignation, "I feel that the election of Mr. Donald as president is in the best interests of the company, because it places the company's executive direction in the hands of a man of proven ability who, as a resident of Cleveland, is in a better position to devote his full time to the day-to-day operations, and to constructive planning for the future development of the company."

174 MILLION PEOPLE BY '75

### Strodel Says:

#### Boom In Population, Housing, and Income Is Boon to Dealer

CHICAGO—More families, a bigger population, higher individual dollar-income, and a boom in housing have opened a vast new market for home furnishings. The wise dealer will gear up his merchandising program accordingly.

The gigantic dimensions of this market were roughed in by Fred C. Strodel last week when he addressed some 200 trade representatives at a luncheon of the Merchandise Mart Housewares and Appliance Association.

Strodel, who is vice president of the Fair Store, gave his audience an indication of how greatly the individual market for appliances and home furnishings has skyrocketed.

"Since 1939," he said, "about 13,359,000 additional people have crowded into the United States! There are 14 million new family units. One out of three American families is a new family since 1940. At least 2,500,000 families are living doubled up (more than twice the number there were in October, 1945). There are 25 million war babies.

### 174 MILLION PEOPLE BY '75

"It is estimated that by Jan. 1, the U. S. population will have grown almost 14 million (from 131 million in April, 1940, to 145 million) an increase of 10%. The number of families will have increased by over 4.5 million from 35 million—an increase of 13.5%. At the rate we are now adding to the population, it is predicted that there will be 174 million people in the U. S. by 1975, which is 29 million more than at present."

Besides this record growth in prospects for home furnishings, Strodel pointed out how individual spendable income has likewise experienced an upsurge.

"Incomes of individuals, available for spending after taxes are paid, are expected to reach \$200 billion a year by the 1960's," he continued. "Income after taxes last year amounted to \$175.6 billion for the people of this country. Before the war, the comparable figure was only \$66.2 billion."

### HOUSING STARTS MAY HIT PEAK

A big year in home building will round out a perfect picture for the retailer. Apparently just that is in prospect, Strodel believes.

"It is estimated that unless something goes wrong suddenly, 1948 is going to be the biggest year yet for new home building. More new dwelling units were started in the first quarter of this year than last—actually 164,000 new starts, or a gain of 15%. The Department of Commerce predicted that a total of 950,000 privately financed units would be started this year, and if that prediction proves correct, 1948 will top 1925 (previously the record year) by 13,000 units.

"Congress has just recently passed a bill designed to stimulate the construction of 15 million new homes in the next 10 years. This would make it possible for millions of families now unable to afford home ownership because of high prices to establish their own homes—and these new home owners would become home furnishings purchasers."

## Reed To Be Full-Time RSES Educational Director

CHICAGO—Paul B. Reed, industry service and sales executive, and author of articles and books on the subject of service, has been appointed full-time educational director of the Refrigeration Service Engineers Society, it was announced by William J. Marshall, international president.

The appointment was described as another step in RSES's long-range plan to expand and intensify its services to members and to more effectively correlate its activities with other organizations in the refrigeration industry.

Reed's duties will consist of assisting chapters and state and regional associations with their educational programs, distributing bulletins and articles to members, collecting and editing sections of an "All Makes Service Manual," cooperating with other trade organizations in their educational activities, and assisting international officers—particularly Secretary H. T. McDermott—in day-by-day routine work.

Reed has been active for several years in the educational work of the society, first as chairman of the wartime educational committee and for the last two years as chairman of the international educational and examining board.

Starting in 1919 as a serviceman for a Kelvinator dealer in Louisville, Ky., Reed worked on some of the earliest electric refrigeration equipment. He joined Servel in 1926 and was with that company for 18 years, the last nine of which he served as service manager of the Electric Refrigeration and Air Conditioning Division. In 1943, he joined Perfex Corp. as manager of the Refrigeration Controls Division.

Reed is a past chairman of the Milwaukee section of the American Society of Refrigerating Engineers and has served on several national ASRE committees. He is also a member of the Engineering Society of Milwaukee and is a registered professional engineer of Wisconsin.

A number of his articles have been published in trade periodicals. (He is the author of the "Refrigeration Problems" series in the News.) Two of his books on refrigeration have been published and three more are to be published within a few months.

### Korsmeyer Opens Omaha Branch

LINCOLN, Neb.—The Korsmeyer Co., Lincoln wholesaler of electrical appliances, has opened a branch office at Omaha at 702-12 South 10th St., with Lee F. Powers and Louis Piccolo as branch managers.

### UNIT COOLER CLOSE-OUT

All popular sizes of nationally known manufacturer. Brand new and in original crates.

Capacity	Fan Size	Price
5300	12"	\$ 58
7500	12"	69
9600	16"	84
12750	16"	97
15200	16"	114

—Write for list of other specials—

**ABBEY REFRIGERATION EQUIPMENT CO., Inc.**

56 Court Street  
Brooklyn 2, N. Y.  
Ulster 5-6960

## THE LOUDON LINE FOR '49



New dry bottle cooler. Two sizes.  
Self-contained or remote. Disappearing doors.  
Stores up to 30 cases. Clean, dry, cold.  
Dealers—write for prices.

**LOUDON Sales,** N 2524-27th, Avenue South  
C Minneapolis, Minnesota

BLAST COILS FOR YEAR  
'ROUND HEATING & COOLING

Governair blast coils for efficient heating or cooling take the lead for year 'round business! Smart operators are selling these to convert our completely packaged air conditioners for year 'round comfort. Others use them for cooling or heating in numerous other ways. Made of copper tubing and copper fins spaced according to temperatures involved. All joints are securely welded and a thorough pressure test is made before each unit's delivery. Check into your potential sales of these versatile coils right away! Sell Governorair all year 'round!

COMPLETELY  
PACKAGED AIR CONDITIONERS  
FOR YEAR 'ROUND COMFORT

This is the famous Governorair completely packaged air conditioner which has made air conditioning history! Expertly designed for efficient operation, easy installation and high quality performance this air conditioning unit is known as the greatest VALUE IN THE FIELD!

It can be quickly utilized for year-round air conditioning to provide clean, warm air by connecting a Governorair heating coil to the system. Owners of the unit are your immediate prospects for fall and winter business. Sell them also to those "hot" prospects who didn't order early enough this year. Sell Governorair all year 'round!

UNIT COOLERS FOR  
YEAR 'ROUND REFRIGERATION

The Governorair floor type unit cooler needs no introduction! It is compactly designed for operation in cold storage rooms to produce temperatures below or above 33 degrees. The units may be furnished with either vertical or horizontal air delivery as required. Available in a wide range of sizes to provide air delivery from 1,600 to 20,000 CFM.

Particularly desirable for its efficiency and mobility, this unit was highly praised and its performance was proven in world-wide use by the Army and Navy during the war. It always does a capable year-round refrigeration job, so it's a "natural" sales builder for year-round business. Sell Governorair all year 'round!

### CLIP THIS COUPON AND MAIL TODAY

Dept. H	GOVERNAIR CORPORATION	
513 N. Blackwelder, Oklahoma City, Okla.		
We want to keep sales high during slack periods. Without obligation, please send free literature as checked so that we may sell Governorair all year-round!		
<input type="checkbox"/> Governorair Blast Coils <input type="checkbox"/> Governorair Completely		
<input type="checkbox"/> Governorair Unit Coolers <input type="checkbox"/> Governorair Packaged Air Conditioners		
NAME _____	COMPANY NAME _____	TITLE _____
STREET ADDRESS _____	CITY AND STATE _____	

PIONEERS IN THE MANUFACTURE OF COMPLETELY PACKAGED AIR-CONDITIONERS

GOVERNAIR CORPORATION  
513 N. BLACKWELDER • OKLAHOMA CITY, OKLA.

PIONEERS IN THE MANUFACTURE OF COMPLETELY PACKAGED AIR-CONDITIONERS

NORGE STILL THE...

# "Champion of Independent Distribution"

A MESSAGE FROM H. L. (Red) CLARY

Director of Sales

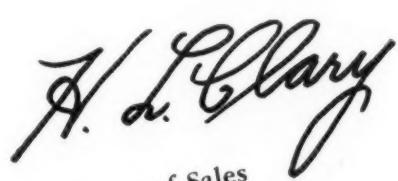
Norge has been in business for twenty-one years.

At the beginning, Norge sought out the independent distributor and his dealer, thus launching a policy for which Norge subsequently became famous.

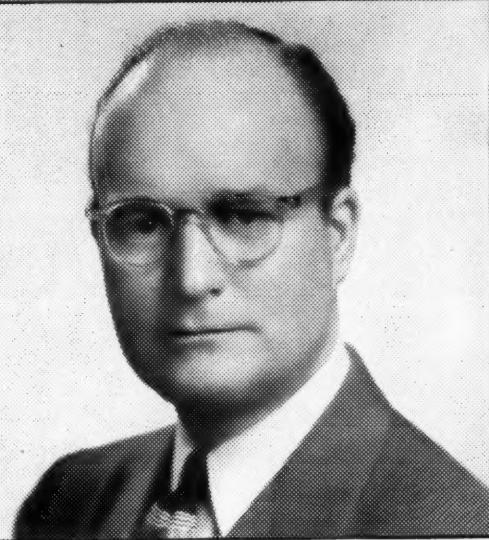
Today, twenty-one years later, Norge still markets its products through independent channels. In fact, Norge is today the oldest manufacturer marketing appliances exclusively through the independent distributor.

We do this because we believe in private enterprise, and because this method of distribution has proved successful over a period of many years. We have no branches—nor are we making any "private brand" merchandise—with which to compete with our distributors and their retailers.

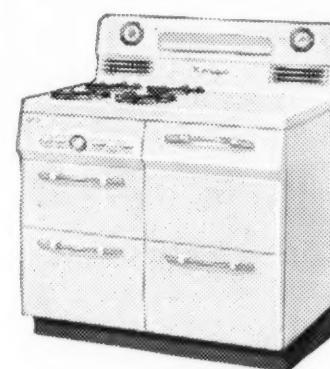
This policy has been good business for us and we hope to continue to merit the honorary title, "Champion of Independent Distribution."



Director of Sales



**NORGE AUTOMATIC ELECTRIC WATER HEATERS**—All models thermostatic-controlled. Single and double heating elements, glass-fiber insulation. Cylindrical and table-top models, 12 to 82 gallons.



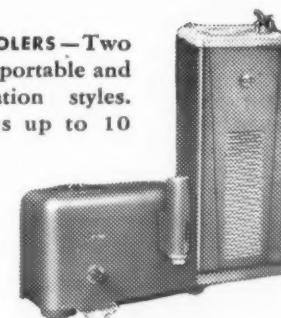
**NORGE GAS RANGES**—Three Norge gas ranges feature exclusive "Concentrator" surface burners for greater economy, more accurate control. Center oven or regular . . . divided top burners or side groups.



**NORGE HOME HEATERS**—Modern oil heat at minimum cost. Four models in all with capacities ranging from 37,000 to 65,000 B.T.U.'s per hour.



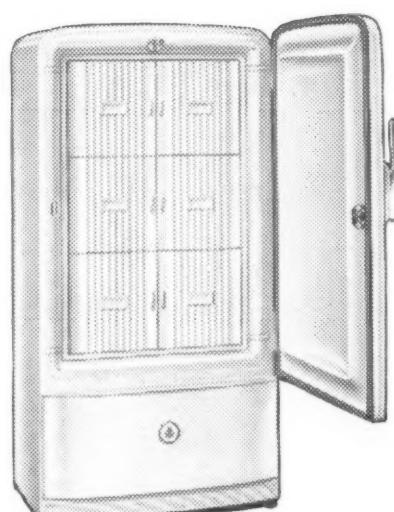
**NORGE WATER COOLERS**—Two popular models, in portable and permanent installation styles. Cooling capacities up to 10 gallons per hour.



**NORGEWASHERS**—Three models provide economical "home laundries" for small and large families . . . triple-washing action, non-splash roll-rim tub, steam-seal cover.



**NORGE REFRIGERATORS**—Eight Norge refrigerators from 6 to 10 cubic feet. Also Commercial Refrigerators and Coolers.



**NORGE HOME FREEZERS**—One upright 6-cubic-foot model and three chest type models with 10-, 18- and 26-cubic-foot capacities.



**NORGE ELECTRIC RANGES**—All surface units on all four models have seven cooking speeds, "Tele-Switch" control. New contour design, balanced oven heat, glass-fiber insulation.

SEE  
**NORGE**  
BEFORE YOU BUY

Norge Division, Borg-Warner Corporation  
Detroit 26, Michigan

In Canada: Addison Industries, Ltd. Toronto, Ontario

A BORG-WARNER INDUSTRY

## Gibson Plans \$1 Million Expansion; City Gives Land

BELDING, Mich.—The recently approved gift of seven and one-half lots (adjoining the old Murray Body Corp.) to the Gibson Refrigerator Co. is expected to open the way for a \$1 million expansion program by the firm.

Donor of the property is the City of Belding whose city attorney is already drawing up papers for transfer of the tract. Gibson, which centers its range production here, is planning a new \$500,000 factory building on the site, city officials stated. It is estimated that 500-800 additional persons will be employed by Gibson here by the time the expansion is completed. A spokesman for the manufacturer indicated, however, that plans for this venture are indefinite.

Meanwhile Gibson is reportedly preparing to equip the former Murray Body Plant (another Gibson acquisition) with approximately \$750,000 worth of machinery to get production going full swing at an early date.

## Spartan Mills Installation Will Cost \$450,000

SPARTANBURG, S. C.—The Bahnsen Co., of Winston-Salem, is installing a \$450,000 system of air change and humidity control at the huge Spartan Mills plant here, one of the South's leading textile enterprises.

Mills officials said cost of two five-story equipment towers, housing equipment and just completed by the Fiske-Carter Construction Co., accounted for approximately \$230,000 of the cost.

"The new system is being installed for comfort and health of employees and to improve production," John M. Caughman, plant superintendent, stated.

Caughman added that huge fans in the No. 2 mill will have a capacity of nearly 550,000 c.f.m.

"The air, before being fed through an elaborate system of tunnels and ducts, will be washed and cooled in giant washers with a capacity of more than 4,500 gallons of water per minute," he explained.

## Independent Small Retailers Course Offered by New York City College

NEW YORK CITY—Applications for admission to a course for small independent retailers at City College School of Business will be accepted up until Oct. 6, it has been announced here.

This course, which is designed to train students for active management of their own shops as well as for managerial positions in independent or chain stores, will utilize a combination of class and field work to simulate actual conditions existing in a retail store.

Instruction by businessmen, visits by small merchants and specialists in addition to part-time field work in various city stores will bring to the class the every-day aspects of retail operation, college officials emphasized.

Among the aspects of this field to be considered during the course are merchandising, store management, buying, salesmanship, sales promotion, advertising, display, business

law, product information, and retail accounting.

Audio-visual aids will implement the studies directed by City College, reportedly one of the first such institutions in the U. S. to offer such an intensive course.

According to information released by the college, there are no special preliminary requirements for admittance to the class other than a personal interview and test. As approved under the GI Bill of Rights, the course is available through the Evening and Extension Division in either day or evening sessions.

Those taking the day class will attend from 9 a.m. to 4 p.m. five days a week for 15 weeks. The evening session will last 30 weeks and will meet Monday, Tuesday, and Wednesday for four hours.

Queries should be directed to:

Supervisor of Admissions, City College Midtown Center, 430 West

50th St., New York City 19.

## Appliance Sales Up 30% In Inland Empire Area

SPOKANE, Wash.—Major appliance sales in the Inland Empire area of eastern Washington and western Idaho for the first six months of the year increased 30% over the same period last year, according to a report issued by the Washington Water Power Co. here.

Electric ranges led the field with a 51.5% increase over last year. They stood 1,898 units higher than 1,247 and 131 units above the entire year of 1941.

Home laundry equipment gained 30%, improving as the supply increased. Clothes driers alone more than trebled last year's total.

Though the utility looked forward to even better sales during the last half of the year, the July report on dealer sales showed ranges, water heaters, and refrigerators falling below June. July sales of home freezers, however, were up 66% over June. Increases were also noted in clothes washers and driers, ironers, and vacuum cleaners.

Unit sales for the months of June and July and for the first seven months of the year are as follows:

Appliance	June	July	Mos.
Ranges	1,094	1,041	6,480
Water Heaters	622	610	3,967
Refrigerators	1,353	1,140	6,926
Home Freezers	153	254	829
Clothes Washers	866	902	5,860
Clothes Driers	17	29	182
Ironers	104	140	847
Vacuum Cleaners	281	460	2,760

## I-H Plans 1,000 Units Daily With New Plant Completed

CHICAGO—With all major manufacturing equipment installed in the new refrigerator plant of International Harvester Co. at Evansville, Ind., the company can "now look forward to attainment of the production goal of 1,000 refrigeration units daily," John L. McCaffrey, president, announced to stockholders recently.

McCaffrey also announced that International Harvester had attained a greater sales volume during the quarter ending July 31 than in any other quarter in the company's history. The gain was 5.14% over the preceding quarter and 28.5% above the same quarter last year.

## Orr Firm Purchases Belcher Industries, Inc.

MIAMI, Fla.—The Belcher Oil Co. here has announced that it has sold all its interests in Belcher Industries, Inc. to the associated firm of Alexander Orr, Jr., Inc. and Alexander Orr Associates, Inc.

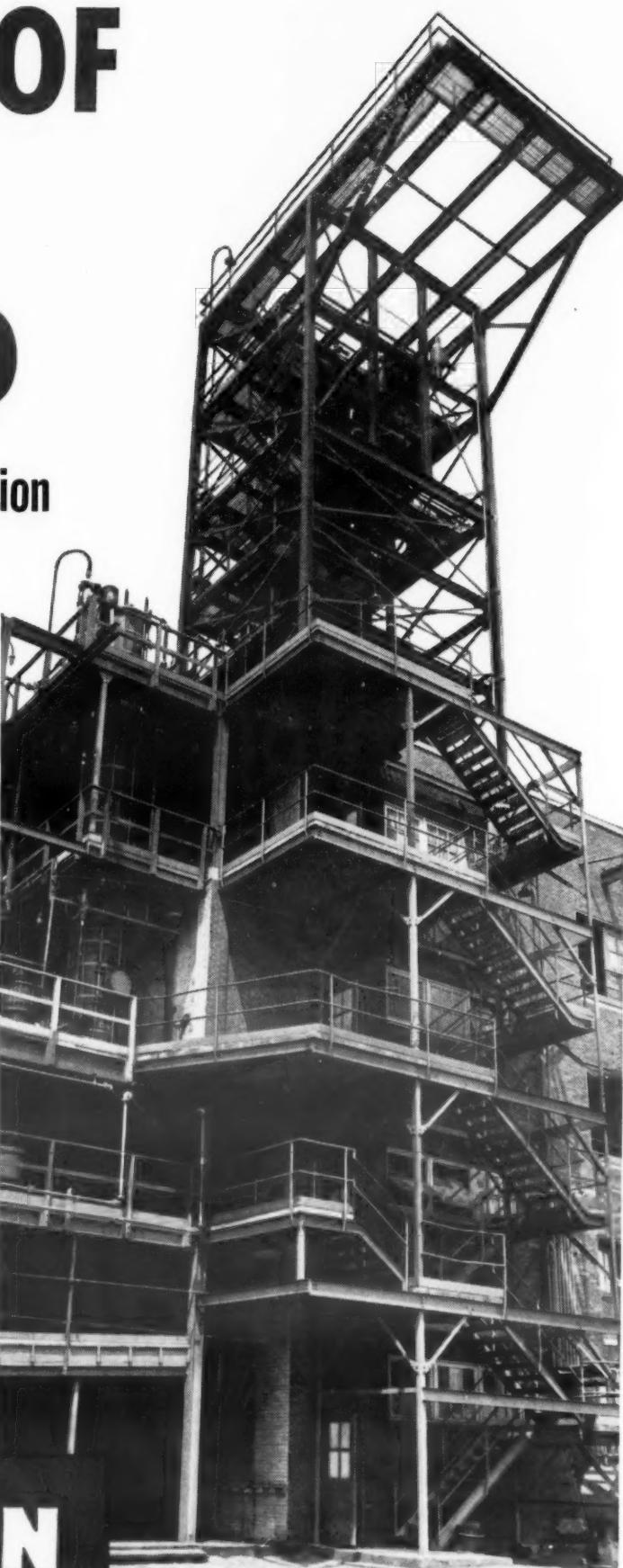
Belcher Industries, Inc., air conditioning, refrigeration, and heating firm, will continue to operate at its present location, 1221 Biscayne Blvd. and with its same personnel, according to Alexander Orr, Jr., new president of the firm.

Paul E. White, formerly vice president of the Belcher organization, resigned from that position to continue as vice president and general manager under the firm's new owners.

Alexander (Sandy) Orr III has become secretary and treasurer.

Belcher Industries, Inc., founded in 1915, is said to be one of the earliest air conditioning and refrigeration companies in the city.

Within a year, however, Belcher Industries, Inc. is expected to be absorbed completely into the Orr organization and provided with new quarters.



View of the new Kinetic plant in East Chicago, Ind. Here, elaborate equipment installations, technical skill, engineering "know how," and laboratory control of the "Freon" syntheses combine to produce ample "Freon" for every user.

The need is still urgent for empty cylinders. Please return empties promptly.



## Proper Placing of Food In Refrigerator Cuts Spoilage, Inspector Says

PITTSBURGH—"Eating places can cut food spoilage considerably by putting foods at proper places in the refrigerator," says Howard B. Patton, superintendent, Bureau of Inspection, as Pittsburgh began an A-B-C grading system that will classify publicly the sanitary conditions of every eating and drinking place" in the city.

"The mechanical side of refrigeration around the city is in pretty good shape," says Patton, "but employees must be educated on the proper places to put food in the refrigerator, or under the new law establishments will suffer. Today, for example, employees are putting tomatoes, celery, and lettuce high up in the refrigerator where they freeze."

"Under our new A-B-C grading," says Patton, "grade A places will put (1) cream-filled pastry halfway down in the refrigerator (30-40° F.); (2) cold-storage meats in the freezer (0° F. or less); (3) meat to be used in a week around the freezer section or in it (30-38°); (4) fruits and vegetables one shelf under freezer (38-40°); (5) butter near the freezer (32-38° F.); (6) fish and sea foods in another refrigerator (to eliminate odor) and placed near the freezer (0° F.)."

"If your refrigeration is 10 years old," says Patton, "you better keep your eye on it," for regulation No. 13 of Pittsburgh's new grading law reads "all readily perishable food and drink shall be kept at or below 50° F. except when being prepared or served," and inspectors can drop in at any time.

The public will recognize grade A places as "very, very strict," grade B places as no better than the majority, and grade C as "pretty bad, with many major violations."

## N.Y.'s First New Playhouse In 20 Years To Be Air Conditioned

NEW YORK CITY—Air conditioning is already slated for the first new legitimate theater to be erected in New York City in 20 years, though only the site has been selected so far.

Robert Dowling, president of City Investment Co., big theater owner and possessor of the site, declared that the new building will house a 2,000-seat deluxe theater and possibly some stores. It may be a city block deep, he added, with entrances on two streets.

He pictures the theater as one whose sound wiring equipment, lighting, and smart decor will give theater-goers the impression they are in a much smaller house.



## The McCary Signal Light

Prevents Refrigeration Losses  
Needs No Servicing  
Absolutely Foolproof

Locally for use on walk-ins, reach-ins, display cases, ice cream cabinets, soda fountains, food freezers, floral boxes, refrigerated trucks, etc. Adjustable from -10° to +60°.

Contact your local wholesaler

MCCARY MANUFACTURING CO.  
201 Mobile Street El Paso, Texas



## Preserving Documents on Freedom Train



Center of attraction in this scene is a Frigidaire dehumidifier, 12 of which have been installed on the Freedom Train to protect the Constitution and other documents. With the dehumidifiers inside humidity has averaged 55%. Onlookers are: Lee Clark, assistant general sales head; Harry M. Kelly, appliance sales manager; and Phil M. Bratten, general sales manager.

## New Carrier Corp. Loan From Metropolitan Life Adds Working Capital

SYRACUSE, N. Y.—Carrier Corp., leading manufacturer of air conditioning and refrigeration equipment, has borrowed \$7,500,000 from the Metropolitan Life Insurance Co. on its 3½% promissory note due Sept. 1, 1963.

The loan was arranged through Harriman Ripley & Co., Inc., and Hemphill, Noyes & Co.

In making this announcement, Cloud Wampler, president of Carrier Corp., stated that the proceeds will be used to retire the purchase money mortgage of \$3,050,000 on the modern, 59-acre plant located near Syracuse, purchased in 1947 from War Assets Administration, and also \$3,000,000 of long-term bank loans arranged in 1946.

The remainder of the loan, Wampler said, will be added to working capital, such being advisable because of a greatly increased volume of

business. After giving effect to this, the net working capital of the corporation will be in excess of \$18,000,000.

The Metropolitan Life loan will constitute Carrier's entire funded indebtedness and the corporation now has no short-term borrowings, Wampler said.

Carrier Corp. recently announced a new high record of \$55,734,519 of completed contracts and sales for the 12 months ended July 31, 1948. The comparable figure for the preceding year was \$46,120,771.

## Third Frozen Food Convention Planned for Chicago In March

CHICAGO — The third national frozen food industry convention and exposition will be staged in the Stevens hotel here from March 6 to 10, 1949, F. J. Becker, president of the National Association of Frozen Food Packers, has announced.

Major emphasis will be laid on exhibits of equipment, machinery, and supplies for packing and delivering frozen foods, he noted. However, merchandise exhibits will be offered as an added feature.

# "Detroit" No. 672 and No. 892 Automatic Expansion Valve

## QUICK RESPONSE

## EXCEPTIONAL DURABILITY

"Detroit" Automatic Expansion Valves are compact, rugged, durable—quickly responsive to pressure changes and consistent in operation. They are designed for use on domestic and small commercial applications.

### No. 672 "Detroit" AUTOMATIC EXPANSION VALVE

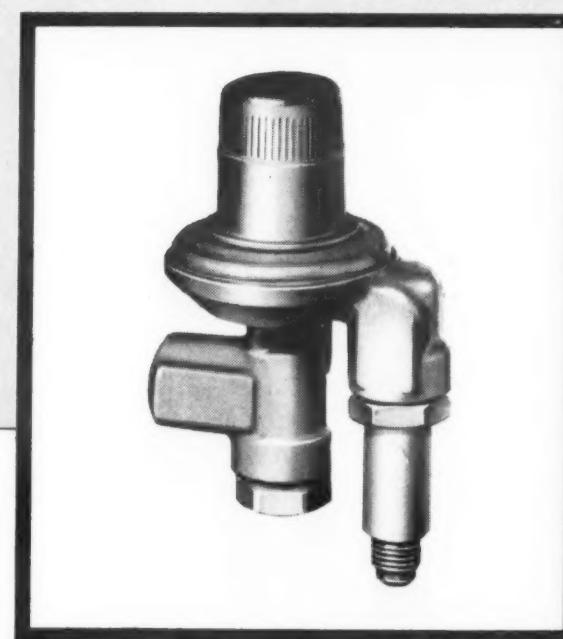
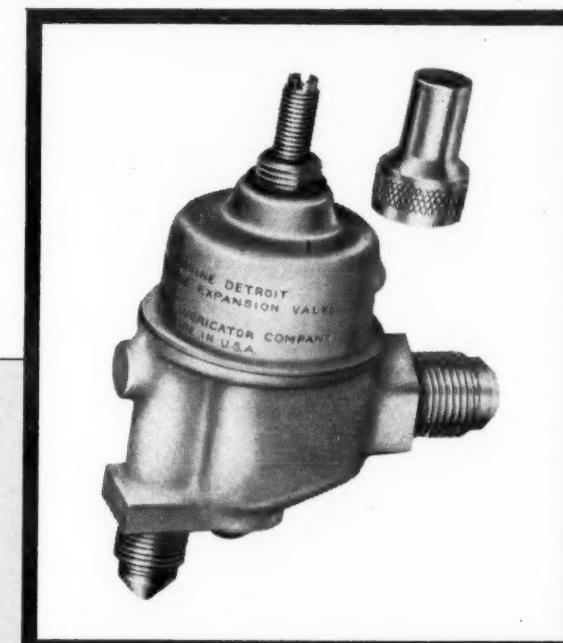
Bellows construction makes this valve extremely sensitive to pressure changes and consistent in operation. Designed for use on domestic and commercial applications where close control of evaporator pressure is required.

#### Some Outstanding Features

1. Constant suction pressure—constant motor load.
2. Duraflex bellows for wide range flexibility, long life.
3. Swivel type needle—no rubbing—no leaks.
4. Brass cap and gasket seal—no moisture infiltration.
5. Single adjustment for pressure or vacuum setting.
6. Fluid dashpot eliminates chatter.
7. Delubaloy needle and seat for long wear.
8. Inlet strainer furnished with valve.
9. Two ranges: 25" vacuum to 25 lbs. and 5 lbs. to 50 lbs.
10. Inlet:  $\frac{3}{8}$ " S.A.E. for  $\frac{1}{4}$ " or  $\frac{3}{8}$ " liquid line.
11. Outlet:  $\frac{1}{4}$ " F.P.T. or  $\frac{1}{2}$ " S.A.E.
12. Orifice:  $\frac{1}{32}$ ",  $\frac{5}{64}$ ",  $\frac{5}{32}$ " or  $\frac{7}{32}$ ".
13. Capacities: .35 to 3.6 tons Freon-12; .66 to 6.6 tons Methyl; .58 to 5.8 tons Sulphur Dioxide.

### No. 892 "Detroit" AUTOMATIC EXPANSION VALVE

Single diaphragm construction. Adjustable range 15" vacuum to 40 lbs. Inlet,  $\frac{1}{4}$ " S.A.E. Outlet,  $\frac{1}{4}$ " F.P.T. or  $\frac{1}{2}$ " S.A.E. Capacity,  $\frac{1}{2}$  ton Freon-12; 1 ton Methyl or Sulphur Dioxide.



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DETROIT

"Detroit" Heating and Refrigeration Controls • Engine Safety Controls • Float Valves and Oil Burner Equipment  
"Detroit" Expansion Valves and Refrigeration Accessories  
Stationary and Locomotive Lubricators

Serving home and industry

AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILER • ROSS HEATER • TONAWANDA IRON

# INSIDE DOPE

by GEORGE F. TAUBENECK

(Concluded from Page 1, Column 1)

And they win allegiance to their unholy principles by default.

## Freedom to Invent

Rose Wilder Lane, the eminent novelist and historian, has rediscovered a marvelous civilization—that of the Saracens. In her brilliant book, "The Discovery of Freedom," she piles evidence on top of evidence to prove that the medieval Moslems were the most enlightened and progressive people ever to inhabit the Earth—until the Americans came along.

Nearly all history textbooks give short shrift to the Moslem Empire which flourished on so grand a scale a dozen centuries ago. Most of us were taught that the Mohammedans were (and are) murderous, backward infidels who marry four wives apiece and maintain harems. Actually, the Saracen civilization, which the Mohammedans founded in the seventh century A. D., was possibly the happiest and most progressive Enlightened Era of all time.

Mohammed (who was quite a guy) took both the Old and New Testaments of our Bible for his text, and then added a few chapters and prin-

ciples. One of his added principles was CLEANLINESS. He was a fanatic on that subject, and so are his followers—down to this day. Mohammedans are probably the most frequently-bathed-and-washed people on earth. Second, he detested planning. "Organization," wrote Mohammed, "corrupts knowledge."

In the glorious Saracen civilization, there were no policemen or bureaucrats, no five-year plans or "social security" schemes. Every man was on his own.

Result: Saracens bestowed upon future generations the priceless legacy of mathematics. They established astronomy and agronomy as sciences (they were the first to forecast weather and rotate crops). They invented the magnetic compass and the sextant, which made long-voyage navigation possible. They elevated medicine from sorcery to science, and compiled the first medical pharmacopoeia. They built hospitals, founded universities, explored the world, encouraged the fine arts—and took literally Jesus Christ's superb Golden Rule. They practiced, as well as preached, Tolerance.

They were the first pure scientists, and the first free traders. In fact, they founded international commerce and the voluntary exchange of scientific information. Because Mohammed, their Prophet, had warned them against the evils of Organization and Planning, they applied personal initiative and voluntary cooperation to the hilt. With no policemen or politicians, or bureaucrats or

dictators or Over-all Plans to inhibit them, the Saracens had a wonderful time, lived handsomely, and learned a lot about a lot of things.

## Where the Renaissance Came From

Borrowing from the Saracen's knowledge and culture, traders who ventured across the Mediterranean Sea from the Italian "free ports" instigated the Renaissance, which revitalized and reinvigorated all Europe.

Unorganized, anarchistic, "Free-to-Invent" Saracens pioneered irrigation, artificial soil fertilization, contour plowing, and the vitamin-enriched fruits-and-vegetables diet. All these advances were borrowed by Renaissance Europeans.

From the Saracens they learned how to harden steel with alloys, to mix artistically bits-and-fragments of common materials into mosaics, chinaware, asphalt paving, glass, and talcum powder. They founded the commercial cosmetic industry, and they heralded the telegraph and the railroads by setting up swift means of communication between traders. The Saracens had their version of the Pony Express, and they pioneered the use of carrier pigeons.

Their freedom from governmental restraints allowed commerce and invention to flower and burgeon nobly. Profitable trading and imaginative creativity occur on the grand scale only when uninhibited, unhandicapped, and unbothered men can make decisions on the spur of the moment, and without consulting a rule book.

Although the Saracens had no organization and no planned economy, they comprised the greatest "nation" in the world for more than eight hundred years. They expanded and luxuriated over most of the explored world. And their people were happy.

What's more, the contributions of their "let alone" experimenters to scientific and commercial advancement far outshone those contributions to the world's stockpile of knowledge proffered by other civilizations—until the Twentieth Century (the American Era) arrived.

Both the Saracen and the American Eras are characterized by their emphasis on freedom, cleanliness, scientific advancement, production, trading and merchandising, rapid transit and swift communications, good health, abundant living standards, and absence of planning. And in both Eras, the participants in this free and enlightened manner of living were (and are) relatively happy and satisfied.

In formulating his philosophy, Mohammed borrowed heavily from the teachings and experiences of Abraham, Moses, John the Baptist, and Jesus. Each of these front-runners for the Religion of Personal Worth insisted that Paganism (worship of Authority, and helpless self-abnegation to the Fates) was silly.

All religions except the Christian and the Mohammedan take off from the philosophical canard that everything is static, that creation ended when the gods fashioned our world, that progress is a futile dream, and that all existing wealth should be re-divided. But Moses—one of the earliest Christian prophets—when he was pressed by his still idolatrous followers for some reassurance as to their security, inserted this pregnant warning into his Ten Commandments:

"Thou shalt have no other gods before me."

That's a profound philosophic concept. Kowtowing to Authority is tantamount to the worship of idols. Moses suggested: "To thine ownself be true." Mohammed glorified that principle. And Christ repeated it over and over again. Christ said: "The Kingdom of God is within YOU."

## Historic Parallels

The Mohammedan Saracens and the Christian Americans—neither of whom have believed that their economies ought to be redivided, instead of being built bigger—have written the brightest and most glorious pages into the history of our world. Their civilizations are monuments to the theory that freedom and elasticity are preferable to planning and formal organization, and that Man is superior to Government.

Americans capitalize upon the unexpected. The results of this illogical theory and policy have always been astounding to the devotees of Logic, Order, and Planning.

Both medieval Saracens and modern Americans have demonstrated, however, that personal freedom, eagerness to gamble on a new idea, patience to see that new idea through to its ultimate triumph, and the unselfish pouring out of energy in behalf of an innovation, will lift masses of mankind into a higher, happier Life.

## Give The Americas a Break

The time is ripe to start allocating exports to our real friends and long-time customers. American hemisphere countries—Canada, and South and Central America—would welcome with open arms United States exports such as automotive, electrical and machine goods.

Supporting the theory that immediate production allocations to these countries would be beneficial to all parties concerned are several major factors.

Imports from these hemisphere countries of metal and raw products are enormous, should continue to grow, and could be paid for by United States exports. Not only raw materials, but finished product imports flow in great numbers from these countries to the United States, and should be encouraged.

Our present facilities can readily accommodate exports, to the Americas, with open ports at New York, San Francisco, and New Orleans, in addition to others on the Atlantic and Pacific coasts and the Gulf of Mexico.

With the present validity of dollar transfer, credit, and trade-information arrangements, an excellent opportunity to cultivate the neglected hemispheric export market awaits United States manufacturers.

## South American Exporting Isn't a Simple Matter

Before plunging headlong into the potentially sizeable Latin American market, however, manufacturers ought to pause long enough to hear this startler: There ain't no such animal!

Which is to say, they are confronted with not one, but many and most dissimilar Latin American markets. That exporter who wants to invade Latin America will do best who approaches each market individually.

Attempts to make a single sales appeal to an entire area of important differences can produce only limited

results. Confusing as it may seem, there are differences not only between, but within these many proud countries.

Two of these variations which assume most significance are those which refer to the matter of advertising as it relates to the twin problems of language and purchasing power.

Spanish is, of course, the main tongue.

But most of the Spanish-speaking Latin Americans employ in their everyday vocal discourse certain expressions peculiar to their own country. These locutions often are misunderstood elsewhere in American Speech. And in Brazil, the language is Portuguese; in Haiti, it is French.

Related to the language problem is that of literacy—which ranges from 80% in one country to 20% in another. So it is that Latin-American publications vary greatly, in terms of numbers and usefulness, to advertisers, in accordance with the ability-to-read of their audiences.

As for purchasing power, in South America this important factor drops from a high of nearly 100% in Argentina (as related to the U. S.) down to around 25% in Brazil—and then on down to about 10% in Peru.

While these estimates are still low by our standards, this total purchasing power surely is rising as increased industrialization takes place.

In view of these differences, exporters dealing with Latin Americans might well ponder the advice of James F. Stiles, Jr., vice president of Abbott Laboratories:

"Our packages, our approach, the use of our products should conform with the uses and customs of the country in which we want to sell them. Every variance from that custom simply sets up that much more sales resistance and in the long run increases the selling cost. . . . In short, think in terms of the natives of the country; prepare your approach in a manner and language they understand. . . ."

There's no short-cut to the South American market. Each nation presents an individuality of its own.

## Meow

Two women were discussing the failings of a neighbor.

"Well, you must admit she is polished," said one, somewhat reluctantly.

"Yeah," agreed the other. "Every time she says anything, she casts a reflection on someone else."

# Multiplex

**Stainless Steel**

## BAR DISPENSER



Fresh Carbonated Drinks  
COLA, LEMON, GINGER ALE, SELTZER

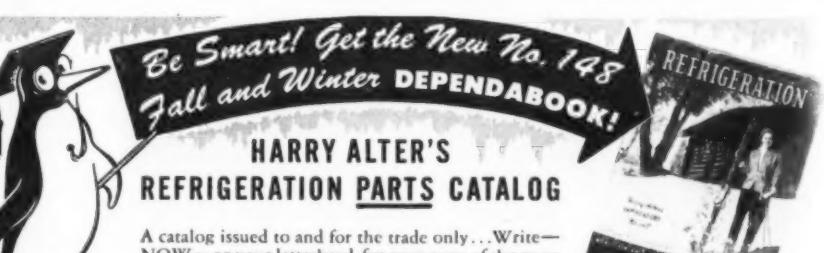
WRITE FOR ILLUSTRATED BULLETIN AND PRICES

**DEALER & DISTRIBUTOR INQUIRIES INVITED**

**MULTIPLEX FAUCET COMPANY**

4325 DUNCAN AVE., DEPT. ARN-14, ST. LOUIS, MO.

MANUFACTURERS OF SOFT DRINK DISPENSERS OVER 43 YEARS



A catalog issued to and for the trade only...Write—  
NOW—on your letterhead, for your copy of the most  
nearly complete refrigeration-parts-and-supplies catalog  
in the business—the new DEPENDABOOK!

**The HARRY ALTER CO.**

1728 SOUTH MICHIGAN AVE.  
CHICAGO 16, ILL.

134 Lafayette St., New York 13, N.Y.

WHOLESALE ONLY



**PURO FILTER CORPORATION OF AMERICA**  
436-440 Lafayette Street, New York 3, N.Y.  
Cable address—"Centadrink, New York"



## Lincoln, Neb. To Fine Foodhandlers Who Fail To Keep Perishables Below 50° F.

LINCOLN, Neb.—The city council has placed in operation an amended sanitation ordinance with regulations governing food-handling establishments, requiring all readily perishable food to be kept at or below 50° F. except when being prepared or served, and making it mandatory that all refrigeration equipment be kept clean.

Refrigeration equipment, the ordinance specifies, must be so constructed that the "contents thereof cannot become contaminated."

Foods and drinks which must be kept refrigerated include milk, milk products, egg products, meat, fish, shellfish, gravies, poultry stuffing, sauces, dressings and salads containing meat, fish, eggs, milk, or milk products. The director of the City-County Health Department points out that the ingredients of custard and cream-filled pies and pastries constitute an ideal media for the growth of dangerous bacteria if not stored at 50° F. or lower, and therefore he recommends that such foods be refrigerated until served to the patron. This provision later may be incorporated in the ordinance as mandatory.

Prepared foods stored in refrigerators should be protected against droppings from storage on upper shelves, the health department also warns, and fresh meats should be stored on lower shelves below salads and other prepared foods. Food products "must not" be stored on floors in walk-in refrigerators, the ordinance states, and should be stored at least 6 in. above the floor and at least 3 in. from the refrigerator walls to facilitate air circulation and for protection against contamination.

Under terms of the new law, all waste water from refrigerating equipment must drain into an open sink or drain and the latter must be properly trapped and connected with the sewer. It is provided, however, that where sewer connections are not available, clean, adequate, and water tight, drip pans may be used, or drainage may be disposed of in any other approved manner.

The pouring lips of bottles containing milk or other beverages in non-leakproof containers must not be submerged in water for cooling. It is also recommended that bottled drinks such as carbonated beverages and beer be refrigerated in such a way that their tops do not become submerged in the ice or cooling water. Moreover, it is stated, drinks in paper cartons should not be refrigerated in chilled water, but should be cooled by only a dry refrigeration system.

All refrigerating equipment must be so constructed that it may be easily cleaned and must be kept in good repair, the ordinance declares, and manual contact with prepared food or drink shall be avoided whenever possible. The regulations add:

**RECO**

**COMPLETE ICE PLANTS & ICE PLANT SUPPLIES**

Diesel and Electric Plants, Agitators, Fillers, Pumpers, Air Agitation Systems, Pressure Vessels, etc.

**RECO PRODUCTS DIVISION**  
20 NAUDAIN STREET, PHILA. 46, PA.

insist on genuine  
**Marlo**  
products  
MARLO = HEAT TRANSFER Since 1925



**HEIGHT:** 56-in. overall.

**LENGTH:** 10-ft. In multiple line-ups, each section occupies 118½-in.

**FINISH:** Porcelain enamel applied to genuine enameling iron, combined with polished stainless steel and high-baked Dulux. Mirror has copper backing.

**REFRIGERATION:** Designed for remote operation. ½ h.p. unit normally required.

**GLAZING:** Genuine Thermopane panels, made up of two panes of permanently bonded glass.

**LIGHTING:** Full length fluorescent.

## ASRE Booklet Describes Activated Carbon Use

NEW YORK CITY—Use of activated carbon for purifying, deodorizing, and general cleaning of air in air conditioning and ventilating systems is comprehensively discussed in the latest brochure issued The American Society of Refrigerating Engineers headquarters here, titled "Air Purification and Deodorization by Use of Activated Carbon."

Known as Application Data 42, the eight-page booklet contains information on the control of odors in air conditioning, selecting a suitable type of air purifier or deodorizer, installation, economy in air recovery, computations for ventilation or air recovery, etc.

AD 42 was written by F. H. Munkelt, vice president of W. B. Connor Engineering Corp., recognized authority on the subject of his pamphlet.

Copies of this publication of material on activated carbon may be obtained from ASRE headquarters for 45 cents each.

## Frozen Chicken Pies, Other Specialty Items Prove Keys To High-Volume Turnover at Denver Bakery

DENVER—A high-speed, reach-in quick freezer installed at the main plant of Kliss Bakeries here has made possible high volume production of frozen bakery goods in a small space, according to E. E. Goodson, general manager.

The firm, which has found that success in this new field lies chiefly in "specializing" in a limited line of bakery goods, started operations two years ago. It now has a long list of retail distribution points, including a 16-store grocery chain, many locker plants, neighborhood grocery stores, and delicatessens.

Kliss Bakeries specializes in frozen chicken pies, fruit pies, biscuits, and cream-puffs, all produced by techniques developed in the plant. Three women are kept busy eight hours a day making up chicken pies, while two men produce biscuits.

As rapidly as prepared, the items are quick frozen in a 6-ft. by 8-ft., two-door reach-in refrigerator by a circulating blast of cold air. Chilled

air is provided by a 1,000-c.f.m. McQuay blower-and-coil unit mounted at the top of the box.

Thirty shelves, spaced a few inches apart, are located on either side, with 13 larger shelves at the back for quick freezing of cakes and larger items.

It requires only a few hours to freeze several gross of chicken pies and biscuit packages, according to Goodson.

## H. G. Kirkwood Named General Service Manager by Mills

CHICAGO—Hiland G. Kirkwood has been named general service manager for Mills Industries, Inc., here.

Kirkwood, who has been in the refrigeration field in sales, service, and engineering work for the past 22 years, was formerly associated with the Frigidaire Corp. and Refrigeration Engineering, Inc., of Los Angeles.

**OPEN...**  
*for business!*

for **PACKAGED MEATS**

for **PRODUCE**

for **DAIRY PRODUCTS**

## 3 DIFFERENT CUSTOMERS

This new flexible case can be sold for three different items: dairy products, produce, packaged meats. And three big sales features show how versatile this fixture is.

**1. Adjustable temperature.** Simple adjustment gives you a range from 37° to the higher temperatures suitable for fruits and vegetables.

**2. Adjustable display shelf.** Easily changed shelf can be varied from level required for dairy products to the best slant for packaged fresh meats or produce. Produce dividers increase the convenience and display value.

**3. End-to-end installations.** By removing the end Thermopane glass panels and installing a narrow shelf section, any number of these Koch cases can be installed end-to-end.

Markets, produce stores, and dairy stores are ordering more and more self-service fixtures. This Koch case gives you a flexible, dependable refrigerated fixture to sell to any type outlet.

Write Today  
For Details  
And Open Territories

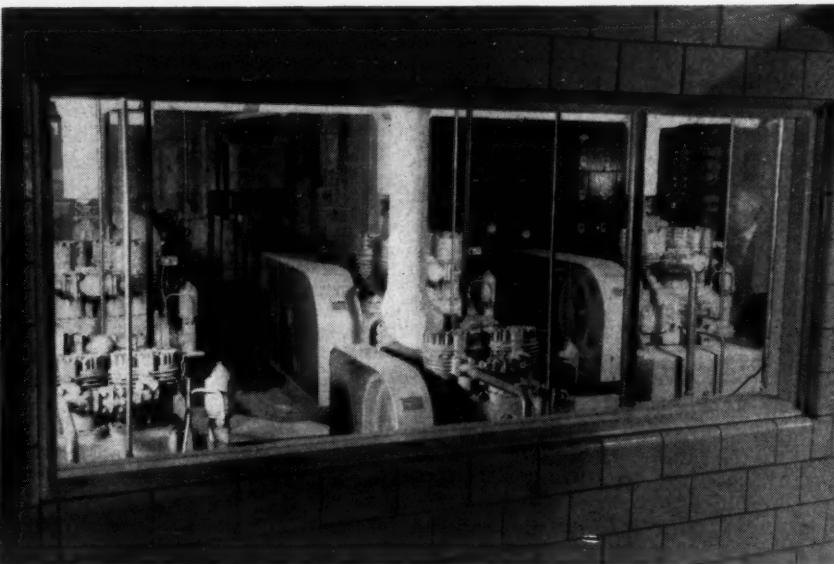
**KOCH** *Refrigerators*  
NORTH KANSAS CITY 16, MO.

Since 1883

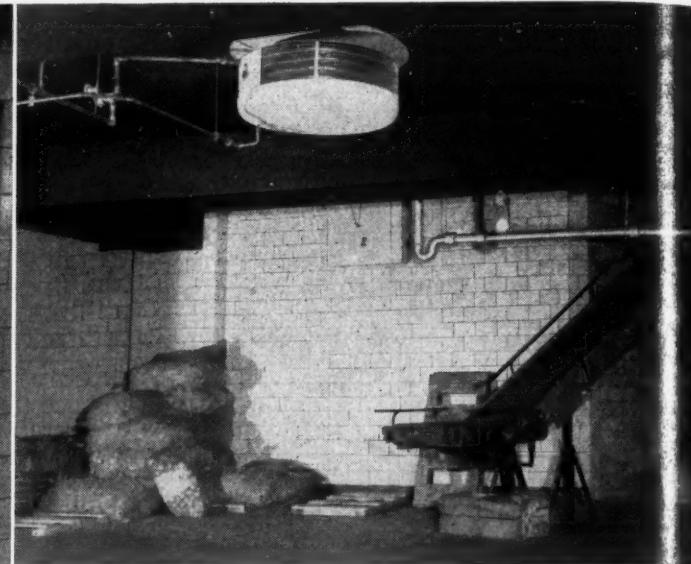
## 100 Hp. of Refrigeration at College Will Preserve Enough Food To Feed 8,000 Persons Daily



All during the past summer the new Food Stores Building of Michigan State college has been freezing college-grown food and stocking up on commercially packaged frozen items as shown above for the beginning of the fall term when the institution will supply food on a wholesale basis to feed 8,000 students three times a day. There are four frozen food rooms.



Refrigeration is dramatized at the Food Stores building, where it plays an all-important role, by this show-window setting of the machinery room. Located in the basement of the three-story building are these five Carrier water-cooled compressors which refrigerate 14 rooms. The two interconnected machines in the foreground handle 10 high-temperature (35° F.) rooms, while the three in the background are interconnected to supply two large frozen food storage rooms and two quick-freeze rooms.



Twenty-seven Bush ceiling blower units have been installed in the 10 high temperature rooms at Michigan State college's Food Stores building, as indicated in this view of a large perishables refrigerator in the basement where high humidity conditions are maintained. At the right is the conveyor leading down from the truck dock which speeds produce from truck to refrigerator.

### Neatness & Simplicity Mark Installation Of 5 Machines & 31 Low Sides at M. State

By C. Dale Meriele

EAST LANSING, Mich.—Swinging into its first full-scale operation as the fall term opens at Michigan State college here, the institution's new Food Stores building is preparing to handle the food requirements of 8,000 persons daily.

In addition, it will store enough pop, candy, and hot dogs to supply 15,000 persons a day through concessions.

All this means a lot of refrigeration, some 100 hp. of it in fact, which was installed by the Garlock Sales Co. of nearby Lansing.

With this new building, the college plans to act as its own food wholesaler, supplying fresh and frozen meats, vegetables, in fact, virtually all the food requirements, to 15

institutions on the campus. These include 14 dormitories and the college Union building.

A pioneer in this type of operation (there are said to be only two other buildings in the country at present), the college expects to liquidate the half-million dollar structure over a period of 20 years through its operating profits, according to Robert Herron, manager of the building.

#### Seek Uniform Quality

One of its primary objectives, however, is to insure uniformity of quality in its purchases. The savings to pay for the building will come largely through purchasing in large quantities, Herron indicated.

The building is claimed to have sufficient space to warehouse 30 carloads or 45,000 cases of canned goods plus staples like flour and sugar. The three meat coolers will hold five carloads of meat. There are 5,600 sq. ft. of cooler space for produce, eggs, and cheese, plus freezer space for eight carloads of frozen foods.

The freezer space, incidentally, not only includes frozen food storage accommodations but also two rooms for freezing of meats, fruits, and vegetables.

Now containing three stories and a basement, the building is designed and constructed for the possible future addition of a fourth story. It is located on a railroad spur just a hundred yards or so from the college's newly enlarged football stadium, the freight car loading dock being long enough to accommodate two cars at once.

On the opposite side of the building is the covered truck loading dock which can handle five large semi-trailers at a time. Overhead meat tracks run from both loading docks into the meat refrigerators and the food preparation room located on the first floor.

#### Conveyors Speed Handling

Also on the loading docks are conveyors leading directly down to the refrigerated rooms in the basement to speed handling and get such foods as produce under refrigeration as quickly as possible. Most of the foods will be unloaded onto pallets and hauled around on hydraulic lift trucks.

Altogether there are 14 refrigerated rooms in the structure, 10 of which are held at 35° F. The four frozen food rooms are held at 0° or below. This adds up to approximately 8,600 sq. ft. of high-temperature space and 2,700 sq. ft. of low-temperature space.

The "Freon-12" refrigeration system is designed to handle a calculated high-temperature (35° F.) load of 277,900 B.t.u. an hour plus a low-temperature load of 154,660 B.t.u. per hour, according to M. L. Baldwin, refrigeration engineer for the Garlock firm.

The over-all mechanical design of the building was engineered by Snyder & McLean of Detroit, with the Garlock company installing the refrigeration and Armstrong Cork Co. putting in the insulation for the rooms.

Incidentally, the Garlock organization is a veteran Lansing establishment and holds an unlimited Carrier Corp. franchise in the state. In addition to putting in such large installations as the Food Stores building, a large skating rink at the college, and others, the firm operates a live-wire appliance department, and wholesales repair parts in the Lansing area.

#### Broad Background

M. L. Garlock, who heads up the firm, has been in the refrigeration and appliance business for years. At one time he was an appliance distributor and prior to that distributed automobiles. In his very modern office he preserves a tattered newspaper clipping from 1920 showing a Garlock Sales Co. advertisement as an automobile dealer.

Garlock and Baldwin, as well as all the others involved in the Food Stores building are justly proud of it. The building is extremely neat and clean, and neatness and clean appearance as well as simplicity mark the refrigeration installation.

"We only found one leak when we tested the system," Garlock asserts.

The cooling plant comprises five Carrier compressors hooked up to two evaporative condensers on the roof and supplying 27 Bush ceiling type blower coils in the high-temperature space.

ture rooms and four Carrier "cold diffusers" in the low-temperature space.

The high and low-temperature high sides are independent, three Carrier machines being interconnected for the low-temperature system, while the other two are interconnected on the 35° F. system.

These five compressors are all grouped compactly in the basement machinery room. As a matter of fact, the compressors are "on display," for there's a large window on the corridor side of the room looking directly on the units.

Similar treatment is given the brightly illuminated meat processing room on the first floor directly above the machinery room. Two large windows in each of the two corridor sides of the processing room let visitors see how the meat is processed.

At the south end of the basement are three refrigerated rooms which are used largely for the supplying of the college's concessions department. Here such items as pop, candy, and hot dogs which the concessions department handles are kept under refrigeration.

One of these is approximately 40 ft. square and is refrigerated by means of four Bush SU105 ceiling type circular blower units. This size and model coil is used throughout the high-temperature rooms, a total of 27 being employed in the building. They all operate on a 10° t.d. and are rated at 10,500 B.t.u. per hour.

Adjoining this room there is a 28 by 22-ft. room with two ceiling units, while the corner room measures approximately 40 by 18 ft. The latter also has two ceiling units.

Incidentally, these three rooms are kept padlocked because of the nature of their contents—candy, pop, etc.

#### Vestibules Reduce Load

A glance at the accompanying building layout sketches for the basement and first floor will show that all the refrigerated rooms open into insulated vestibules fitted with cold storage doors. This, naturally, keeps heat infiltration at a minimum.

(Concluded on next page)

# ICE-FLO'S

*Completely Automatic*

**ICE CUBE MAKER**  
A Really Reliable Machine  
No Gadgets or extra working parts . . .

**FOR**  
**HOTELS**  
**BARS**  
**RESTAURANTS**  
**CLUBS**  
**HOSPITALS**  
**RESORTS**

**NOW**

**1949**

**MODEL FEDERAL OPEN CASES**

**THE NEW**

**Federal SELF-SERVE**

TEN FOOT DOUBLE DUTY Model 3010

**SPECIFICATIONS**

HEIGHT	DEPTH	WIDTH	FINISH	COMPRESSOR	ICE
35" for all models	27 1/2" for all models	19" to 57"	Aluminum and Stainless Steel	1 1/2 to 3/4 H.P. 110-115 V A.C.	1000 to 4000 cubes per day 1 to 9 bushels

**A size to fit all requirements**



You add profits, enjoy greater sales, reduce labor costs, with this 1949 display. 5 great models . . . all with most advanced 1949 features.

Easy reach-in, fluorescent lighting, porcelain clad front . . . uses small space for large display. Great for fresh vegetables and fruits, dairy products, packaged meats, etc. Easily adjusted to high humidity for vegetables, normal dairy temperatures, and low-32° for meats.

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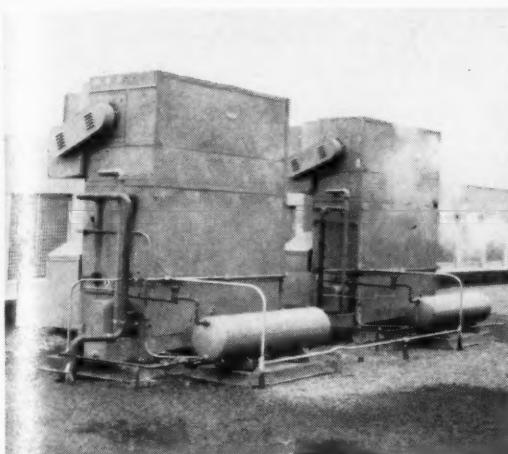
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**ACME INDUSTRIES INC.**  
JACKSON, MICHIGAN

## College Expects Quantity Purchases To Pay for Refrigerated Food Stores Bldg. In 20 Years



Atop the third story of the Food Stores building are two Carrier evaporative condensers which conserve water for the refrigeration system. Walls of the new football stadium in the background come up just a little too high to permit an enterprising serviceman to spend his Saturday afternoons this fall "adjusting" the condensers. Tackling a new job of any size is no problem for M. L. Baldwin (left), refrigeration engineer, and M. L. Garlock, who heads up the Garlock Sales Co. of Lansing, installers of the refrigeration system at the college. Drawings at the right indicate the location of refrigerated rooms and compressors at the Food Stores building. There is no refrigeration on the second and third floors.

\* \* \*

### Settings of Pressure Switches Allow for Sequence Operation of Compressor Units

(Concluded from preceding page)

There is 4 in. of cork all around on the high-temperature rooms and 6 in. on the low-temperature rooms. The latter are fitted with 8-in. thick doors, while 6-in. doors are used on the high-temperature rooms.

At the opposite end of the basement there are three more refrigerated rooms identical in size, layout, and equipment with the three described above. These three are employed for the storage of fruits and vegetables, and so the relative humidity is maintained at a high point for optimum storage conditions.

It is into the two corner basement rooms, as the sketches indicate, that the conveyors from the truck loading dock dip.

#### First Floor Refrigeration

On the first floor of the building are located the frozen food rooms and the meat rooms, along with a salvage-garbage refrigerator and a refrigerated shipping room.

The beef refrigerator, which opens off the vestibule at the south end of the first floor, also has a door leading directly to the meat processing room. The beef room measures 40 by 28 ft. and has five blower units.

Adjoining it is the pork refrigerator, approximately 24 x 28 ft. in size with three ceiling units. Next to this is the salvage-garbage refrigerator, 12 by 28 ft., which is held at 35° F. by a single unit cooler. In the far corner is the refrigerated shipping room measuring 40 by 16 ft. and cooled with two units.

At the north end of the first floor in the corners of the building there are two frozen food storage rooms, each 40 by 25 ft. in size, while in between them are two sharp-freeze rooms. Each of the latter is 30 by 12 ft.

There is a Carrier 15Q6 "cold diffuser" equipped with a manually operated water defrost system in each of the four rooms. The storage rooms are held at 0° F. or below while the quick-freeze rooms will run from -10° to -20°. Each of the freezer rooms is claimed to be capable of freezing 5 tons of food a day, pulling it down from 70° F.

#### Low Side Controls

Controls on the low sides in the low-temperature room consist of Alco solenoids in the liquid line which are controlled by thermostats. There is one for each "cold diffuser."

In each of the high-temperature rooms control is achieved by Alco suction pressure regulators with solenoid pilots and thermostats.

Although there are time clocks in each room for automatic defrosting,

the high-temperature blower units operate pretty much on a defrost cycle.

As for the high sides of these two main systems, the high-temperature room units are supplied by two interconnected Carrier 4-cylinder 7G6 compressors each driven by a 20-hp. motor.

The compressor controls are simple, consisting of suction pressure switches and magnetic starters. The pressure switches are set so that the two machines can operate independently or together, being hooked up to common suction and hot gas lines with oil-equalizing lines between the crankcases.

One machine is set to cut in at a slightly lower suction temperature than the second. If, after the first machine starts, the suction temperature continues to rise, the second machine cuts in. The cut-out point for the first machine is set slightly higher than that on the second machine, so that the last machine to start is the last one to stop.

According to Engineer Baldwin of the Garlock company, the settings on these controls may be reversed in a year or so to permit more equal wear of the compressors. There is a difference of about 2 lbs. in the control settings of the two machines, he added.

#### Machines Interconnected

The high sides for the low-temperature system consist of three interconnected Carrier 4-cylinder 7G8 compressors. Control hookup for these is identical with that of the high-temperature machines, with the controls being set to permit the three units to cut in and cut out in sequence according to the load requirements.

Hot gas lines from both groups of compressors rise straight above to two evaporative condensers on the roof over the third floor. A Carrier 9Q9 unit, the largest the company makes, serves the high-temperature system, while a 9Q7 evaporative condenser handles the low-temperature system. The big unit has a 5-hp. fan motor, the other, a 3-hp. fan motor.

These two evaporative condensers are so located on the roof that it will not be necessary to move them should the college ever decide to add a fourth story to the building. In this event, the additional story would be erected around the condensers, which would then be connected to ductwork.

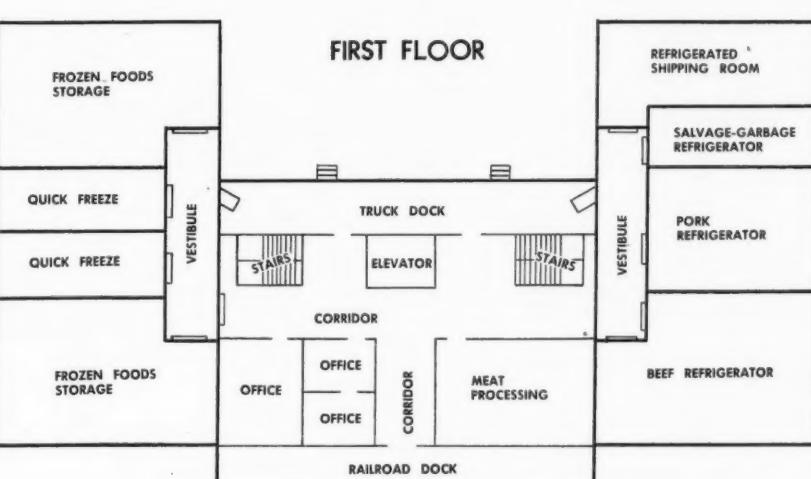
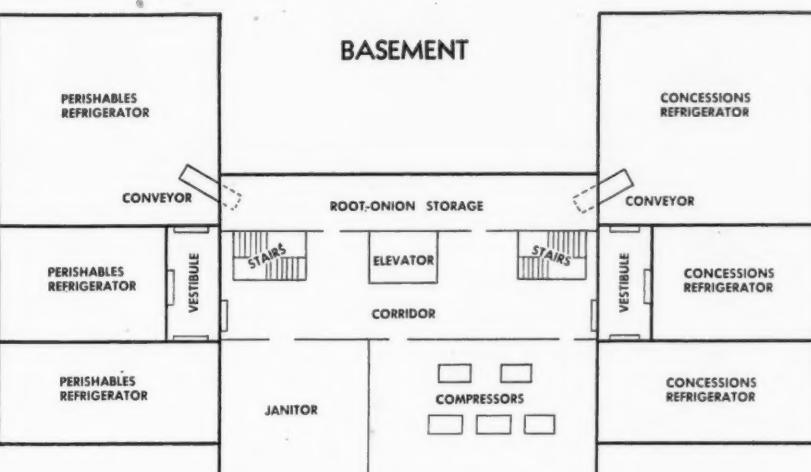
The evaporative condensers were employed to conserve water. A weatherstat which actuates solenoid valves in the water and drain lines

will shut off the lines if the weather approaches freezing temperatures.

From that point on the units function as air-cooled condensers. If the outside air temperature gets too low, a by-pass damper controlled by a high-pressure switch recirculates the air through the condenser coil to keep the head pressure up.

Behind each evaporative condenser on the roof there is a Carrier 9G7 receiver tank.

All the suction lines in the installation in the entire building outside of refrigerated rooms are insulated to prevent condensation and the resultant drip.



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*"it will look better longer*

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National advertising tells your customers the story of Bonderizing, a product improvement that adds value and appeal to refrigerators, home freezers, washers, ironers, dryers, metal cabinets, and many other home appliances. Bonderizing anchors paint to metal, resists corrosion, minimizes damage from accidental scratches. Bonderizing keeps fine paint finishes looking better longer.

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## Limitless Market for Home Freezers (2)

(Concluded from Page 1)

section in local newspapers, giving a box number at the newspaper office for replies. The advertisement states that a used home freezer in good condition is for sale at a bargain price. The person replying to the advertisement naturally assumes that the advertisement was placed by some user who wanted to sell and not by a dealer. Many good prospects are created through this medium and many sales for new freezers are made by this plan. A word of caution—be sure that you actually have a used freezer for sale, otherwise, this plan may boomerang on the dealer.

Dealers have also successfully advertised damaged, used, or shop worn freezers in advertisements under their own names, and have also created prospects and sales for new freezers as the result of this plan. Newspaper advertisements of this type, either blind or open, will result in more sales.

### 8. Use the User Plan

Home freezer users are one of your best sources for prospects and sales. Cultivate your users by "call backs." Offer them either cash prizes, wrapping materials, or merchandise premiums for names of friends and acquaintances who have seen their freezer and who have expressed a desire to own a freezer. Follow these leads promptly and carefully and be sure that the "user" gets the premium offered if the sale is made. The "use the user" plan "pays off" if dealers will work it 12 months a year and devise a plan for constant and continuous follow-up of all freezer sales made in their territories.

### 9. Direct by Mail Advertising

Dealers should use literature, advertising reprints, recipe books, books on how to pack away frozen or fresh foods in the freezer, and personal letters to advantage by direct-mail advertising. In fact, anything by mail which will keep the dealer's name and home freezers in front of the prospect at all times will pay big dividends.

This must be a regular program of mailings—not just a "hit or miss" affair. Keep a steady flow of letters and mailing pieces going to your prospect list regularly—it will pay off in big results.

### 10. Window Display and Promotions

Everyone knows that this is an important part of merchandising appliances. Window and floor displays attract attention, create interest, build prospects, and make sales. Every dealer should have a complete line of samples on his display floor and should show a freezer in his window at regular intervals. All dealers should use streamers, displays, and special promotional material furnished by the manufacturer.

While the dealer is using the planned selling program, he should tell the "Proven Profit" Story to sell freezers and make plus profit for himself—and here's the Proven Profit Story.

1. Savings by butchering or buying fresh meats in quantity and freezing and storing in a home freezer.
2. Suburban and farm people can freeze chickens in quantity at their prime and save on feeding.
3. Savings by freezing from garden or farm, and saving cost of buying fresh vegetables from the store.
4. Savings by freezing "in season" for "out of season" use.
5. Saving loss of unused crops by harvesting and freezing entire crop.
6. Save on gas by baking double or triple quantities.
7. Save by keeping left-overs in home freezer and using later.
8. Save by having garden fresh, vitamin rich foods the year-round. Better, more nutritious family diet.
9. Save by buying ice cream and frozen delicacies in quantity at lower cost. Kept perfectly in a home freezer.
10. Save by having a variety of frozen foods on hand ready for instant use when unexpected guests drop in.

These and many other savings are REAL. By compiling them in dollars, it can easily be shown that a home freezer will soon pay for itself, then become a profit maker to ease the family budget. Thousands of home freezer users can attest to this fact.

Dealers should remember that the home freezer market is tremendous and only by using a planned selling program and by telling a "Proven Profit" Story will they be able to get their share of the home freezer business.

# Your Service Work is EASIER...

because



**REFRIGERATION**

**VALVES ARE Dependable**

**(A-P) SELF-CLEANING WATER REGULATING  
VALVE AVOIDS TROUBLE DUE TO  
DIRT AND LIME**

Its many unique design and operating features place the new A-P Model 68-B Water Regulating Valve in a class by itself — for accurately controlling water flow in water-cooled condensing units.

#### INSURES YEARS OF DEPENDABLE SERVICE

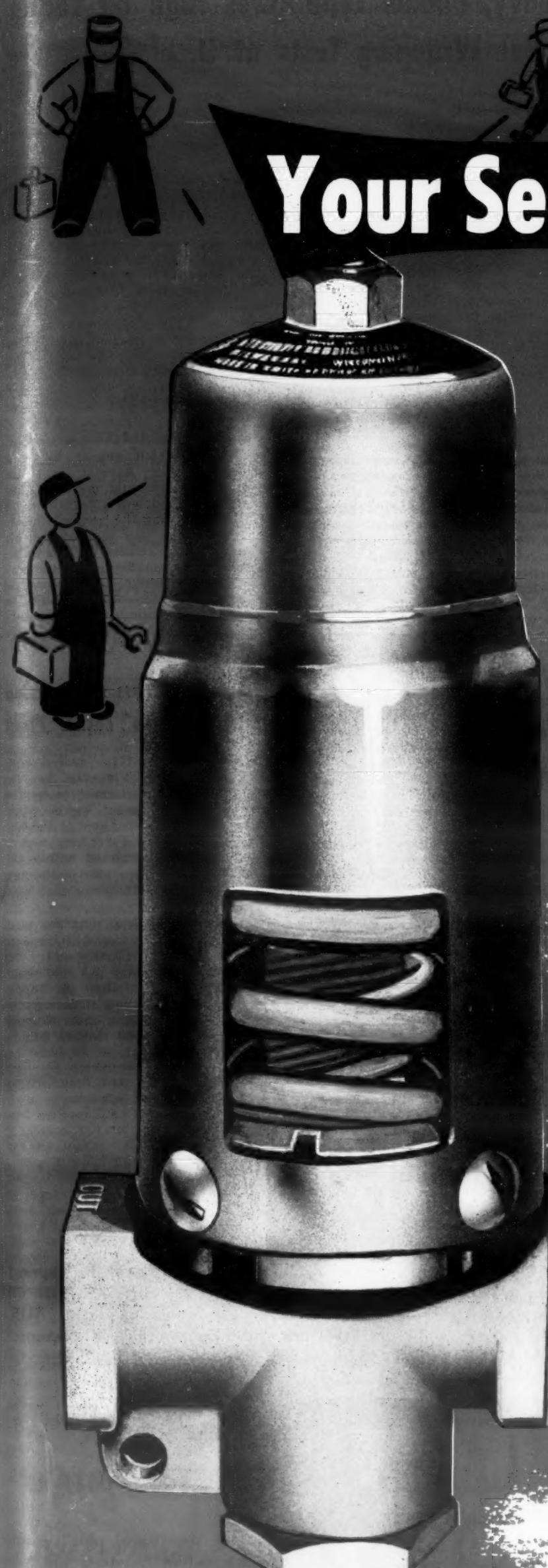
Differing radically from conventional valve design, the Model 68-B employs a molded composition seal on the valve stem. This seal moves across the polished mirror-smooth stainless steel seat, to provide self-cleaning "wiping" action, thus avoiding common troubles due to dirt and lime in the water.

The Model 68-B has been laboratory tested in sandy water — the equivalent of many years of actual field use — and neither the sliding seal nor the seat show any sign of wear — indicating "lifetime" efficiency.

Put the Model 68-B on either new or present installations to improve operation and insure years of Dependable service. Ask your jobber about it, or write for Bulletin No. M100.

#### FEATURES OF A-P MODEL 68-B PRESSURE ACTUATED WATER REGULATING VALVE

- Long Stroke gives closer, more uniform control.
- Self-Cleaning action avoids troubles due to dirt or lime in water.
- Wartime-proved packless "O" Ring valve stem seal
- Chattering, water-hammer positively eliminated.
- Drain plug permits valve flushing.
- Flow not affected by compressor pulsations.
- Head pressure range 50 p.s.i. to 150 p.s.i.
- Adjusting nut easily accessible.
- Used on Freon, Methyl Chloride, or Sulphur Dioxide systems.
- Three sizes —  $\frac{1}{2}$ ",  $\frac{3}{4}$ ",  $\frac{1}{2}$ " inlet and outlet.



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## Plant Supplies Short-Term Free Locker When Patron's Storage Space Overflows

AURORA, Colo.—"Going a little further" to please locker renters by developing a special type of "overflow locker" has built a lot of goodwill for Aurora Food Lockers operated by Ace Purington here.

The thousand-locker plant, built five years ago in the eastern suburb of Denver, specializes in offering complete locker and processing service to ranchers, stockmen, and poultry raisers in the Rocky Mountain area, and as such, has more than 50% of its total services tied up in rentals to customers who must drive long distances to reach the plant.

Such customers have posed problems which do not occur with metropolitan customers, according to Purington. One of the worst of these is the fact that farm wives and ranchers will frequently bring far more foodstuffs in for locker storage than the locker which they have rented will accommodate. Under normal circumstances, the customer would either have to pay for another locker, space in one of the large holding rooms, or lose the surplus foodstuffs.

However, Aurora Food Lockers offers the answer in the form of "overflow lockers" which Purington has built from ordinary plywood, at the end of each bank of all-metal lockers throughout the plant. More than 50 of these have been con-

structed, being simply plywood boxes, equipped with shelving and two doors, which resemble a coffin. These are set on end, measuring the same as the prefabricated metal banks of lockers, and are equipped with a simple hasp and padlock, to protect the contents.

Now, whenever a locker renter brings in more food than his locker can accommodate, a special tag is made out, and pasted on the front of one of the overflow lockers and the surplus foods are placed within it. The wooden lockers will give protection for anywhere from 30 to 90 days, depending upon the food stored, according to Purington—and customers are urged to either accelerate their food consumption, or rent another locker, if the foods are not to be consumed within that time.

### Hollywood Glass Refrigerator Door Co. Incorporated In West

LOS ANGELES—Hollywood Glass Refrigerator Door Co. has been incorporated in Los Angeles County, with a capital of \$200,000. Principals are: Sidney J. Dunitz, Albert E. Marks, and Louis L. Swarrell, all of Los Angeles. The new corporation is represented by Sidney J. Dunitz, 715 Union Bank building, Los Angeles.

## Frigidaire Begins Big Sales Training Program

DAYTON, Ohio—One of the most extensive commercial refrigeration and air conditioning sales training programs in the company's history was launched here Sept. 13 by Frigidaire Division of General Motors for key sales personnel across the nation, states W. F. Switzer, commercial sales manager.

Switzer pointed out that a new year-round training program will attract more than 1,000 key field representatives and commercial dealers to Dayton during the ensuing winter. More than 125 Frigidaire commercial sales managers and sales promotion managers from 44 state-side districts, Canada, and Brazil attended an inaugural two-week sales training school.

A similar commercial school will start Sept. 27 for 75 district commercial sales representatives. On Oct. 11, the first group of 70 commercial refrigeration and air conditioning dealers and their salesmen will undergo the special training. Switzer said that the school series will be continued for dealers and salesmen in groups of 70 every two weeks throughout the winter.

### Storage Plant May Cut Apple Costs In Half

CLARKSON, Ont., Can.—Because they felt 60 cents a bushel was too much to pay to have their apples prepared for marketing, Clarkson growers are building a cold storage plant here on a cooperative basis.

The Canadian government is subsidizing 30% of the enterprise and the province is lending \$65,000. Farmers themselves have raised \$50,000 through sale of 100 shares of stock. Space will be allotted according to the number of shares possessed. Two stories high and of concrete construction, the plant will hold 70,000 bushels of apples.

"It used to cost us 10 cents a bushel to truck our apples to Toronto, 30 cents to store them, 10 cents to bring them back, and 10 cents more to grade them," said Bob Speck, treasurer of the cooperative. "That means 60 cents a bushel. We feel we can cut this in half with our own plant."

The building, now under construction, is supported by 30,000 fruit growers in this district. It will have an elevator and latest design refrigeration. Half the facilities will become available by the middle of next month, in time for this season's apple crop, and the project will be completed by Dec. 1.

### Wurmfeld, Singleton Open N.Y. Consultant Offices

NEW YORK CITY—Charles J. Wurmfeld and Eric Singleton announce that they have resigned from the engineering firm of Gibbs & Cox to open their own consulting engineering offices at 150 Nassau St. here.

Wurmfeld, a graduate mechanical and electrical engineer and a member of the New York State Society of Professional Engineers, has designed air conditioning systems for various businesses and heating systems for numerous apartment houses, office buildings, and factories. He also designs ventilation exhaust systems for plants.

Wurmfeld was with Gibbs & Cox for the past 14 years, where he was in charge of all steam heating on Naval vessels and Liberty ships. Singleton was associated with him for six years in the hull piping department and on factory design and prior to that was a builder.

The new firm is consultant to Peter Sinnott Heating Co., local contractor, and Dale Dance Studios, of New York City, Newark, N. J., and Philadelphia.

## Heavy, Pliable Type Rates High on Locker Paper Wrapping Tests at U. of Minnesota

MINNEAPOLIS—Tests completed at the University of Minnesota frozen food laboratory indicate that butcher wrap as compared with druggist wrap papers is preferable when ordinary waxed locker papers are used, according to Director J. D. Winter.

Tests were made with air-dried cellulose sponges of approximately equal weight. An equal amount (100 grams) of water was added to each sponge at the time of packaging, this quantity of water being about two thirds the amount the sponge would easily hold. A series of three tests were run on each wrapping material and on each method of wrapping and the results were averaged.

After weighing, the sponges were wrapped and placed immediately in a home freezer at about 0° F. for a storage period of 12 weeks. Sponges of this type were selected because they took up a large amount of water in relation to their weight and because the water is readily lost as evidenced by the fact that unwrapped sponges lost 16% of added water in a period of four weeks at 0° F.

After the packages were frozen they were weighed at intervals of two weeks. The weighing was done in a cold room to avoid errors due to condensation. At the end of the 12-week period the sponge, wrapping material, and loose frost were weighed separately.

All the waxed locker papers gained weight, averaging 4.6% of the original weight of the material. Direct comparison between druggist and butcher wraps showed the latter to be more effective in preventing moisture loss when an average waxed locker paper was used. This may be explained by the additional layers of paper covering the product.

On the other hand, better wrapping materials were found to provide effective protection from loss of moisture when only a single druggist wrap is used. The rate of moisture loss itself does not necessarily constitute a competent criterion of rate of quality loss, Winter said. Oxidative changes probably affect quality more than loss of moisture. However, the petroleum derivatives used in coating waxed locker papers are gen-

erally regarded as providing protection from loss of moisture and from oxidation in relatively equal measure.

Different waxed locker papers used in the tests showed wide differences in effectiveness. A single wrap of one paper, for example, gave a weight loss of 1.5% in 12 weeks as compared to 7.6% loss with another type paper. They sold at about the same price per pound.

The pliability of wrapping material is an important factor, said Winter, because the effectiveness of a waxed paper is highly dependent on the continuity of the wax coating, other qualities being equal. A wax coating that cracks when a product is wrapped and frozen is unsatisfactory. Some of the newer waxed locker papers are very pliable, he added.

He cited the advantages of aluminum foil which appear to be a minimum barrier against moisture vapor, air, light, and odors. Other advantages cited were: permit up to 25% freezing, hug the product closely at every point and eliminating air pockets which cause dehydration, non-absorbent, unaffected by temperature, stays flexible, saves material as only one thickness is required. In the tests aluminum foil and acetate bag had a 0.0 loss in weight after 12 weeks at 0° F.

### Georgia Firm Sets Construction Of 'Push-Button' Locker Plant

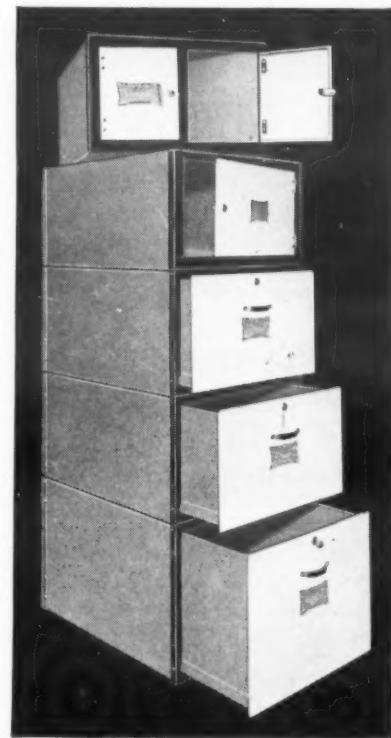
MACON, Ga.—Now under construction at 1905 Vineville Ave. in Macon is what is claimed to be the first automatic freezer locker plant in Georgia. Estimated cost is \$80,000. Construction started in June and is expected to be completed within 120 days. Owner and operator of the new plant is Col. Hal Justice.

The plant will feature automatic lockers, dial controlled. At the push of a button the locker will come to the door making it unnecessary for the customer to enter the cold room. The Southern Insulation & Supply Co. of Atlanta is constructing the building and installing the refrigeration. A total of 560 lockers will be available for rental.

## Are YOU Conscious Of The Critical Meat Price Revolt?

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Consumers are rebelling against high prices (read the papers). That spells opportunity for you. Cash-in on the movement that will exist for several years. Build Locker Plants and Sub-plants NOW. Educate your public when they are price conscious and most receptive. Build for the future. Habits once formed are hard to change. Get on the beam—take advantage of it NOW and use



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## Two Stations Handle Fountain Rush



Rush hours are taken care of at the new Stewart Pharmacy by two complete service stations, served by three separate refrigeration and power units. Any one of the units alone can handle normal business in the event of failure of the other two. This soda fountain and the built-in air conditioning system, the circular vents of which can be seen in the ceiling, are credited with accounting for 30% of the store's business last summer.

## Air Conditioning, Fountain Get Credit For 30% of New Drugstore's Volume

LEXINGTON, Neb.—Air conditioning and a soda fountain served by three separate refrigerating systems accounted for 30% of his business during the past summer, Louis J. Stewart, owner of the new Stewart Drugstore here, declared recently.

Stewart, who expects to do a \$250,000 volume during his first year of operation, opened his new, modern store early this summer. His former store had been destroyed in a fire that swept an entire business block late last year. He planned the new three-story structure himself.

In addition to the air conditioning and soda fountain, he also had installed a new 33-cu. ft. capacity refrigerator for biologicals, two reserve ice cream hardening cabinets, and a humidity-controlled movable display case for cigars and tobacco.

The air conditioning system is powered by an 8-ton Bryant cooling unit. It serves an office at the rear of the main floor and the main sales floor. Vents are built into the walls and ceiling. The building is specially insulated to cut down heating and cooling loads.

The Bryant unit is located on the second floor, which Stewart intends to convert into an electrical appliance salesroom.

The 10-stool fountain has two complete service stations, each being served by an independent refrigeration and power unit. A refrigerated storage section in the lower part of the back bar is equipped with a third refrigerating unit. All three units are hooked up so that any one can do the complete refrigerating job in case of emergency, according to Stewart.

The compressor units are housed

right in the backbar, hidden from view by blonde wall panels that match surrounding fixtures.

The biological refrigerator is divided into four compartments, each further divided into a series of small, enameled, indexed shelves. An itemized catalog listing everything stored in the refrigerator is kept inside the box. All shelves in the refrigerator are adjustable.

The spare ice cream hardening cabinets are kept on the third floor. They are intended to protect Stewart in case ice cream deliveries should be delayed or there should be an unexpected run on the soda fountain.

In constructing his new building, Stewart adopted an unusual staggered floor arrangement that gives him five levels in the three-story building. There is no basement; only sufficient space for a serviceman to reach plumbing pipes and electrical wiring.

The first, or street, level is occupied by the main sales floor. To the rear is an air conditioned office and the stock receiving room. Over these is the second level which houses Lexington's only wallpaper department. A broad stairway leads from the main floor to the department.

A second broad stairway goes from the second to the third level—the future appliance salesroom.

The fourth level provides warehouse space and contains a paint mixing room of fireproof construction, a syrup room, and the two hardening cabinets.

The fifth level, when completed, will house a general storage room.

All levels except the first have 7-ft. ceilings.

## World's Largest Drive-In Eating Establishment Has 3 Walk-In Refrigerators

SAN FRANCISCO—Claiming to be the world's largest curb service eating establishment, Ott's Drive-In Restaurant here boasts two kitchens filled with the latest time and labor-saving devices.

Open day and night, the kitchens are geared to turn out 6,000 meals in a 24-hour period. Fried chicken, for instance, can be turned out 90 orders at a time, taking only 14 minutes to travel from refrigerator to high-speed range to customer's plate.

Owner Ott Straub says that his place can serve 700 persons at one time and has parking space for 250 cars. In addition there is a dining room that will serve 70, an open air patio that will accommodate 100 more, and a cocktail lounge.

The recently opened restaurant is circular in shape with the two kitchens on opposite sides of the building, thus saving steps for car-hops.

Serving the kitchens are three big walk-in refrigerators that are designed to keep foods apart that might transmit odors to each other. There is also a place in them for the storage of garbage.

Other mechanical equipment designed to speed up work includes electric dishwashers, a hamburger molding machine that can turn out uniform sized patties as fast as the griddles can handle them, and infrared lamps over serving counters to keep foods hot while waiting to be served.

Not only are the kitchens streamlined, but the menus are standardized. Changes are made only every month or two, except for little extras when a surplus of such items as chicken livers or turkey wings accumulates.

New York cut steak with biscuits and honey at \$2.50 is the top priced item on the standard menu. From there the price scale drops down through the featured southern fried chicken with biscuits and honey at \$1.50, Welsh rarebit at 90 cents, chicken pot pie at 80 cents, New England baked beans with frankfurters at 60 cents, and Italian spaghetti at 55 cents.

Sandwich menu is headed by a three-decker club sandwich at 90 cents. Hot dogs are 25 cents and hamburgers 35 cents.

## Dep't, Specialty Stores Net Profit Percent Below '35

NEW YORK CITY—Though department and specialty stores reported record dollar sales during the first half of the current fiscal year, they found all categories of expense in an upward trend with net profits down to below the 1935 percentage level.

The Controllers' Congress of the National Retail Dry Goods Association came to these conclusions from a survey of 198 stores throughout the country.

The average gross margin, the congress found, rose from 35.2% for the corresponding period last year to 35.7%. At the same time, payrolls were up from 17.2% to 17.7%. Newspaper costs rose from 2.3% to 2.5%. Total operating expenses amounted to 31.5% of sales.

Dollar sales were up an average of 5% with the average sale rising from \$4.29 to \$4.53.

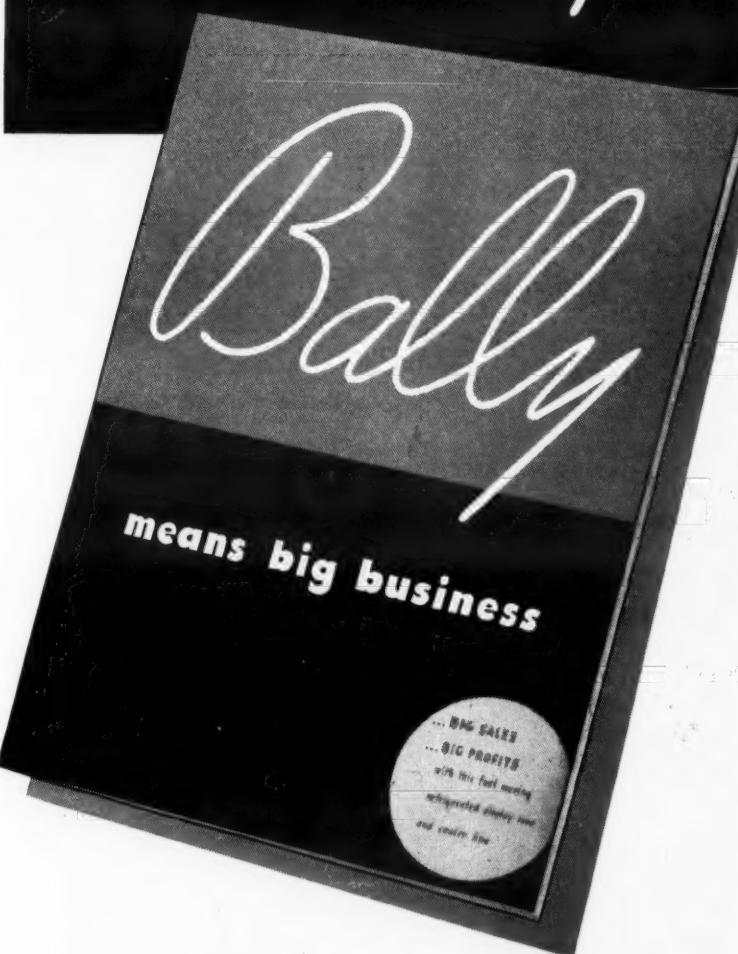
## All Out for Refrigeration

BINGHAMTON, N. Y.—Refrigerated self-service meat cases, a refrigerated seafood case, a frozen foods department, and a refrigerated dairy food counter are features of the new A&P supermarket at 177 Court St. here.



# HERE'S WHY

it pays to be an exclusive  
AUTHORIZED *Bally* DEALER



Let us tell you the complete story  
...you'll like what we have to say

We've packed your copy of "Bally Means Big Business" with reasons why Bally dealers make more sales...bigger profits.

It's a picture and word story of everything from famous Bally Cases and Coolers in production, to the powerful advertising and dealer helps that make an exclusive Bally franchise BIG BUSINESS for you.

## MAIL THIS TODAY!

Bally Case & Cooler Co.  
Bally, Pennsylvania.

I'm interested in an exclusive Bally franchise. Please rush my copy of "Bally Means Big Business."

NAME \_\_\_\_\_

PRESENT LINE \_\_\_\_\_

COMPANY NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

**BALLY CASE & COOLER CO.**

BALLY, PENNSYLVANIA

## Channeling 3-5% of Monthly Gross Into Daily Display Ads Brings Appliance Dealer Sales at 5 Times Last Year's Rate

SEATTLE—Generous portions of display advertising in daily newspapers—large, unusual, attention-getting advertisements—have brought city-wide trade to Jack Miller's Appliance Center, located in an outlying business district, and enable him to compete with downtown stores.

Proof of the success of Miller's policy is a 400% increase in business this year over last. Sales, mostly in major appliances, are running at a \$30,000 per month rate, where sales last year averaged only \$6,000 per month.

Miller's store, operated in conjunction with a Kaiser-Frazer dealership, is located at 4709 Roosevelt Way—out on an arterial highway where there is little walk-in traffic.

So Miller felt he had to go after citywide trade and decided to put from 3 to 5% of his monthly gross into display advertising in daily newspapers. He felt he could afford this heavy investment in advertising because he was not located in a high rent district and could take funds that would ordinarily go into rent and put them into advertising.

His liberal advertising budget allows Miller to place two or three advertisements per week in either the Seattle *Times* or *Post-Intelligencer*, and one per week in the other. In addition, he advertises occasionally in the local neighborhood paper.

Miller has concluded that readers are most likely to judge a firm by the size of its advertisements, so he

usually runs advertisements of 30 to 40 column inches. This gives him plenty of room for attention getting devices and for his sales story as well.

One very successful method of getting attention, Miller has found, is to put humorous cartoon-pictures of himself in the advertisements. These pictures are pertinent to the sales message of the advertisement.

For instance, in one advertisement, Miller is pictured as a doctor, explaining the Bendix automatic washer soil removal test. In another, he is Jack "the plumber" Miller, attired in overalls and a cap labelled "plumber," offering to install an automatic water heater.

In a third, he is pictured with an ice bag on his head, suffering from a headache brought on by too many trade-ins. He is willing to part with these at bargain prices, the advertisement indicates.

Getting attention is only the beginning. Then Miller seeks to impress his sales message on readers by concentrating each advertisement on a single major appliance and then repeating the advertisement in successive runs.

One advertisement alone, no matter how spectacular, brings almost no results, he has discovered. It is not

until the second, third, or even fourth advertisement that phone calls and drive-in prospects start to come in.

Once the calls and prospects do start dropping in to the store, Miller is ready to take care of them with a six-man sales crew. These salesmen spend every day of the week but one on outside selling. They take turns on having a day on the sales floor.

These men, backed by Miller's strong advertising program, find that they are recognized and welcomed by housewives who have read the advertisement.

Though many calls are follow-ups to phone inquiries, other leads are obtained from birth notices, engagements, marriages, and home buying transactions. In the latter case, both the buyer and the seller are considered as prospective customers.

Old customers and servicemen also provide a number of good leads. A systematic method of direct-mail advertising produces good results, too.

Miller keeps a list of all persons who have purchased appliances at the store and what appliances they purchased. With this information, he can send his mailing pieces to the persons who might be interested in the particular appliance being promoted at the time.



### Merry-Go-Round Shelves Bring Bottles to the Front

• Available again, the sensational Beverage Cooler that brings every bottle to the front. Revolving shelves assure uniformly cooled bottles.

Holds 22 cases of pints in half the floor space of ordinary refrigerator. Forced draft. 1/3 H. P. compressor.

Bright aluminum hammered finish. Interior neon lighted. Most spectacular cooler you ever saw.

#### THREE BIG FEATURES

1. Cuts labor in half.
2. Takes half the floor space.
3. Increases sales for your hotel, restaurant, tavern and delicatessen customers.

This specialty item is your answer to price competition. A better net profit to you. Write for details.

**JEWETT REFRIGERATOR CO., INC.**  
2 LETCHWORTH ST.  
BUFFALO 13, NEW YORK

## Co-op Group To Offer Lower Installation Fees On Electric Ranges

MINNEAPOLIS—Through cooperative action, a group of Frigidaire dealers here hopes to increase now-declining sales of electric ranges by reducing installation costs from the current \$75 to \$250 level to less than \$50, it is reported.

The group is understood to be working out an agreement with an electrician under which the latter would install at low cost all appliances sold by participating dealers. The electrician would act in the name of each of the dealers who asks him for an estimate.

The high cost of installing some appliances requiring 220 volts, particularly electric ranges, is the biggest thorn in the sides of most dealers in this area, a survey found.

Fees exacted by most local electricians are said to have been equal, in some instances, to the cost of the range—well over \$200 if the home was not previously wired for the higher voltage. Newer homes have been required to have the 220-line installation since before the war, so electricians' costs in these cases are about 50% less.

Dealers, pleased with the sales of other appliances, are all convinced "something drastic must be done, and soon" about the decrease in range sales due to installation requirements and high fees.

A few dealers reported that nearly half their prospective range buyers lost interest when they discovered the high cost. Most dealers won't even venture a guess when customers ask about cost. They say they will send their electrician for an estimate.

Estimates usually run near the \$75 mark for conventional installations and as high as \$250 for a detailed wiring job in an older, inadequately-wired home, it is reported. Only a few dealers have made arrangements to work hand-in-hand with electricians on an installation cost basis.

### 21% Jump In Home Furnishings Inventories Leads Eastern Area

NEW YORK CITY—Inventories of department stores in the second Federal Reserve district (New York state, northern New Jersey, and southwestern Connecticut) as of July 31 were 11% higher than a year ago, the Federal Reserve Bank of New York has reported.

A 21% jump in home furnishings inventories was the highest for any department.

## Money-Cleaning Show Is Money-Maker for Washer Salesman

ST. LOUIS—It might be "filthy lucre" to some people, but not to Jack Tooill. He cleans it up.

Tooill, a Laundromat salesmen for Wesco here, has developed a money-cleaning technique that should prove a money-maker in the automatic washer field. Here's the way he does it:

When conducting a store demonstration, Tooill first borrows a dollar from one of the prospective customers. Then while the machine is still in the midst of its washing cycle, he slips the dollar through the soap chute and lets it fall into the wash water. It remains there for the rest of the cycle.

"This creates a lot of interest," Tooill claims, "and tends to keep the group on edge throughout the demonstration."

By the time the dollar bill emerges from the washer clean, but unharmed, the curiosity of the prospects is definitely aroused. Tooill usually follows up by pointing out to the assembled group that if mere paper can go through a Laundromat without damage, then certainly no harm would be done to clothing being laundered.

## Germicidal Lamp Sanitizes Clothes In Hamilton Dryer

TWO RIVERS, Wis.—Hamilton automatic clothes dryers are now equipped with a germicidal sanitizing light, according to an announcement by Chas. H. Rippe, sales director, home appliance division, Hamilton Mfg. Co. here.

Known as the Hamilton Sun-E-Day lamp, this new feature gives the clothes a germicidal treatment while they dry, destroying airborne germs, bacteria, and molds. In addition to the germ-killing wave length, the lamp gives off a second type of ultraviolet radiation which thus creates ozone.

According to Rippe, the released ozone has another advantage besides freshening the clothes. Just switching the lamp on for a few minutes occasionally, in between washdays, will keep the interior of the dryer sweet by preventing staleness from developing.

The new Hamilton lamp is shielded to direct all radiation into the dryer, thus preventing any direct exposure to operator's eyes.

Model	Storage Capacity	Trays
A 1½ Bushel	600 Cubes	3 tiers—210 cubes each freeze
B 3	1200 Cubes	3 tiers—210 cubes each freeze
B 4	1800 Cubes	3 tiers—210 cubes each freeze
B 5	2000 Cubes	3 tiers—210 cubes each freeze

**NORTHWEST EQUIPMENT CO.**  
3021 5th Ave. South  
Minneapolis 8, Minn.

# Refrigeration Problems And Their Solution

By Paul Reed  
For Service and Installation Engineers



Paul Reed

## Factors In Evaporative Cooler Operation (2)

### WATER USAGE

The amount of water used depends upon the amount of cooling required, just the same as when a refrigerating machine is used the cost of operating it depends upon the amount of cooling to be done.

In the summer, when in some of the areas of the Southwest the dry bulb temperatures go to as high as 115° or even more, the cooler will probably be in operation most, if not all of the time. Table 1 above may be used to approximate the amount of water required, although from 25 to 100% will have to be added to allow for the excess water needed to keep the excelsior flushed off.

The amount of air will have to be greater in most climates for the evaporative cooler than for the conventional type using a refrigerating machine, because the supply air will ordinarily be at a somewhat higher temperature. This will be touched on further in a following instalment.

Cooling air for human comfort, or "air conditioning" as it has come to be called, by making use of the principle of evaporative cooling (or cooling by the evaporation of water) is limited to dry climates, such as are found in southwestern United States.

Even in those areas, evaporative cooling is not a completely reliable method, for even the climates that are ordinarily dry, do have some sticky, humid days during which the evaporative cooler is not very effective. Many of the larger installations including hotels, stores, and other commercial establishments are equipped with conventional air conditioning equipment using refrigerating machines.

The dry, hot air from outside, in passing through the wet pads of the evaporative cooler, picks up the moisture that is evaporated. Therefore, although the dry-bulb temperature is reduced (the air is cooled) its wet-bulb temperature rises (its humidity is greater).

As long as the wet-bulb temperature does not go too high it will be more comfortable inside the house than outside. How high the wet-bulb temperature inside the house can go without causing discomfort depends upon the inside and outside dry-bulb temperatures, the occupants own likes and dislikes, and other factors, but the top limit of comfort for most people is from 85 to 90° dry bulb with the wet bulb about 10 or 12° lower. So the top limit of the wet bulb is 67 to 75°, depending upon the dry bulb.

### WET BULB IS BOTTOM LIMIT

The bottom limit to which air can be cooled by means of evaporative cooling is the wet-bulb temperature; that is, if the outside air is 75° wet bulb, the air leaving the evaporative cooler can not be cooler than 75°.

We must allow at least 10° "warm-up" of the air in passing through the ducts, etc., so with a 75° wet-bulb outside the minimum inside temperature would be about 85°.

Since an 85° dry bulb is about tops for a condition of comfort, if a climate has a wet-bulb temperature much above 75°, it is not suitable for use of evaporative coolers for air conditioning for human comfort.

In passing through the wet pads of the evaporative cooler, the air picks up about all the moisture that it will take under the conditions. So the air from the house cannot be recirculated through the cooler, for there would be little additional evaporation, and consequently little further cooling.

### NO RECIRCULATION WITH EVAPORATIVE COOLERS

This means that with an evaporative cooler it is not practical to recirculate the air, consequently it must be all fresh air. Thus the evaporative cooler must cool all of the air that circulates through the house.

Moreover, on days when the wet-bulb is high, up around 75°, the discharge air into the house will be at a high temperature; therefore, a great deal of it will have to be supplied to the house because there can be little difference in temperature between the discharge air from the ducts and the room air. This means a large fan and a high rate of air movement.

### THE CAR COOLER

One application of the evaporative cooler that is a great boon to motorists crossing the deserts, is the automobile cooler. It is a small, metal, barrel-shaped cooler that mounts horizontally on the right-hand window of the automobile, with a small discharge grille directly into the car.

The front end of the cooler is open, so the forward movement of the car scoops air into the cooler, through it and into the car.

The air passes through a wetted pad of excelsior, or a screen, or similar material, and evaporates the water, thus cooling the air to a little above the wet-bulb temperature of the incoming air.

The bottom part of the cooler forms a tank that holds about a gallon of water, which is enough for about 75 to 125 miles of use, depending upon the car speed and the outside dry and wet-bulb temperatures.

In one type, the wetter surface is stationary and water is constantly and automatically flowed over it when the car is in motion, by a small pump that is driven by a fan that is propelled by the wind generated by the forward motion of the car.

In another type, the wetted surface is conical-shaped and is mounted on the cone's axis. The surfaces are kept wet by one of the occupants of the car occasionally pulling downward on one of two cords, and this revolves the conical pad down into the water thus wetting it.

Many motorists crossing the hottest parts of the deserts have these evaporative coolers on their cars. They do not do a perfect job of air conditioning, but they do give relief to the motorist from the intense desert heat.

Car coolers cost only a few dollars and are even available on a rental basis. A motorist rents one with a deposit, on one side of the desert and

then surrenders it and gets back his deposit, less the rental of about \$3. on the other side of the desert. Another motorist going in the opposite direction, rents the same cooler for the return trip, so it just shuttles back and forth across the desert.

Even more popular are the "desert water bags" which are porous canvas bags that hold about a gallon of water. These are tied on the bumper or some convenient part of the car. Some of the water seeps through the bag and is evaporated by the dry desert air. Even in the hot desert, with dry-bulb temperatures of 110° or higher, a cool drink of water can be taken from these desert bags.

### OTHER APPLICATIONS OF EVAPORATIVE COOLING

The principle of evaporative cooling is not confined to cooling air for human comfort. In fact evaporative cooling is most widely used to cool water for condensers of refrigerating machinery, the jackets of steam engines, and various types of industrial equipment.

In the evaporative condenser for refrigeration equipment, the hot gas from the compressor passes through a coil that is directly in the spray or

shower of water through which the air passes. Consequently, the heat of condensation and of compression passes into the spray water, some of which is evaporated and the heat is carried away into the air stream.

With the cooling tower, the water-cooled condenser can be, and usually is, at some distance from the tower. The evaporative process cools the water, which falls into a sump and is then pumped to a water-cooled condenser of conventional type. After picking up the heat from the condenser, the water is circulated back to the cooling tower where it is again cooled by the evaporative process.

In the forced convection tower, the air is circulated through the water by a fan. In the natural draft tower the air simply moves by natural convection.

### DIFFERENCES IN PURPOSE AND TEMPERATURES

In basic principle, the cooling process is the same in the evaporative condenser, cooling tower, and spray pond as the evaporative cooler. In application there are two differences:

1. In the evaporative condenser, cooling tower and spray pond, water is cooled to be itself used for removing heat from other equipment. In the evaporative cooler, the air itself is cooled for use in air conditioning.

2. The evaporative condenser, cooling tower, and spray pond are more widely applicable for they are not required to cool at temperatures as low as those necessary for human comfort. In many applications the evaporative condenser, cooling tower, and spray pond are practical even though they can cool the water to temperatures no lower than 100° or even higher.

**Get the Part  
that's BUILT  
for the Job**

ASK FOR **DELAVAL**

## PERFECTION REFRIGERATION PARTS

Pistons  
Piston Pins  
Connecting Rods  
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Eccentric Shafts  
Valve Plates  
Valve Reeds  
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now manufactured  
exclusively by

**DELAVAL**  
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DES MOINES 13, IOWA

Winter heating . . . summer cooling . . .  
all in **1** package!



**usAIRco**  
Unit Air  
Conditioner

**Look!**

### WHAT IT DOES TO AIR:

HEATS . . . COOLS . . . VENTILATES . . .  
CIRCULATES . . . HUMIDIFIES . . . FILTERS

### WHAT IT DOES FOR SALES:

- OPENS UP desirable, profitable business with restaurants, stores, offices and industrial establishments.

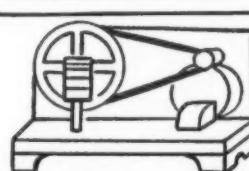
- OFFERS FLEXIBILITY in plans for installation, using floor model or ceiling model.

- IDEAL FOR INSTALLATION in existing buildings—old or new.

- OFFERS WIDE RANGE of sizes, from 1,000 to 12,000 CFM.



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On the Job . . . DAY and NIGHT . . . Dependable

**MANHATTAN WHIPCORD FHP V-BELTS**



**RAYBESTOS-MANHATTAN INC.**

Distributors Everywhere

MANHATTAN RUBBER DIVISION

PASSAIC, NEW JERSEY



If readers have any questions or problems concerning the application of air conditioning, they are invited to write to Mr. LaSalvia, who will be pleased to furnish a complete answer. There is no charge.

### Selection of Water Cooling Coils (Cont.)

#### PROBLEM NO. 1

Calculate the size of water pre-cooling coils, direct expansion coils, expansion valves, and compressor, for the department store system shown previously.

Information of cooling load will be taken from the heat gain calculations chart for this system.

Water available for pre-cooling is assumed at the temperature of 62° F.

#### STEP NO. 1

Total air supply .....	8,600 c.f.m.	100.0%
Outside air .....	1,700 c.f.m.	19.8% @ 95° d.b. & 75° w.b.
Recirculated .....	6,900 c.f.m.	80.2% @ 80° d.b. & 67° w.b.

#### STEP NO. 2

Determine temperature of air mixture entering pre-cooling coils.

$$(95^\circ \times 19.8\%) + (80^\circ \times 80.2\%) = 83.0^\circ \text{ F. d.b. temperature.}$$

$$(75^\circ \times 19.8\%) + (67^\circ \times 80.2\%) = 68.6^\circ \text{ F. w.b. temperature.}$$

Referring to the psychrometric chart, the d.p. temperature is 61.0° F.

Therefore, the temperature of the mixed air entering the pre-cooling water coils is:

$$\text{D.B. temperature} \dots 83.0^\circ \text{ F.}$$

Total latent heat gain (K)

$$70 \\ 56,340 \text{ B.t.u.} \times \frac{70}{30} = \text{sensible heat}$$

W.B. temperature .... 68.6° F.  
D.P. temperature .... 61.0° F.  
The dewpoint temperature of the air is 61.0° and the entering water temperature is 62.0° F.; therefore, only sensible heat removal can be figured.

#### STEP NO. 3

In order to arrive at an economical balance between amount of water used for pre-cooling and operation

#### STEP NO. 1

Total air supply .....	8,600 c.f.m.	100.0%
Outside air .....	1,700 c.f.m.	19.8% @ 95° d.b. & 75° w.b.
Recirculated .....	6,900 c.f.m.	80.2% @ 80° d.b. & 67° w.b.

of compressor, the following points must be taken into consideration:

1. Direct expansion coils should be selected to perform the maximum sensible and latent heat extraction so that the compressor will operate to its best efficiency and at the lowest cost of operation.

2. To obtain the above balance it has been found in practice that the direct expansion coils should be selected to extract about 70% sensible and 30% latent heat.

\* \* \*

$$56,340 \text{ B.t.u.} = 30\% \text{ of load.}$$

$$131,460 \text{ B.t.u.} = 70\% \text{ of load.}$$

$$187,800 \text{ B.t.u.} = 100\% \text{ of load.}$$

ENGINEERED  
REFRIGERANT  
CONTROLS

ALCO VALVE CO.  
ST. LOUIS

"For the HOTTEST DEAL in Town"  
Dealers Say It Everywhere

The Modern • Efficient • Economical

## "NAT" SUSPENDED GAS UNIT HEATERS

3 sizes to suit all requirements 75,000-110,000 and 165,000 BTU Capacity.

Available for Natural, Butane, Propane, or Manufactured Gases.

Delivery within 3 days upon receipt of order. Some exclusive territories still available.

Models 75 and 110 approved by the American Gas Association.

ESTABLISHED SINCE 1929

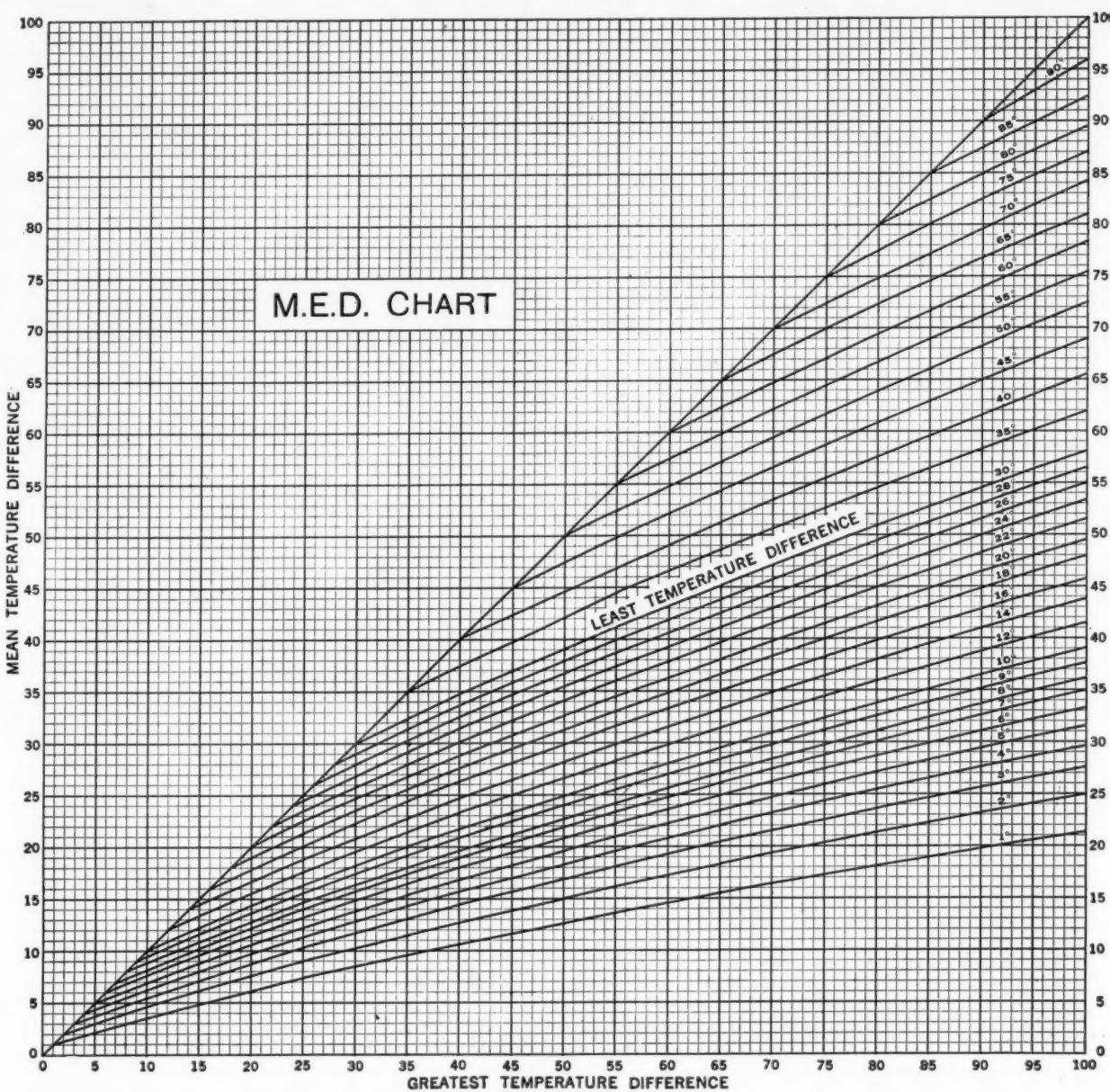


Manufacturers of combination heating and cooling units, and the NAT "Self-Contained Air Conditioning unit."

WRITE, WIRE OR PHONE FOR FULL INFORMATION

THE NAT CORPORATION  
2710 McGee Trafficway Kansas City 8, Mo.

Chart 3



As this is a cut and try method, the above percentages may vary somewhat on different systems, but it will save time to try these percentages first.

The heat gain load to be accomplished by the direct expansion coils and compressor is 187,800 B.t.u. per hour.

$$\text{Total heat gain (L)} \dots 272,384 \text{ B.t.u.}$$

$$\text{Load on compressor} \dots 187,800 \text{ B.t.u.}$$

Remaining load .... 84,584 B.t.u.

The heat gain load to be accomplished by the pre-cooling water coils is 84,584 B.t.u. This is all sensible heat.

#### STEP NO. 4

To find the d.b. temperature reduction of the air passing through the pre-cooling coils:

$$84,584 \text{ B.t.u./hour} =$$

$$1.08 \times 8,600 \text{ c.f.m.}$$

$$9^\circ \text{ F. temperature reduction.}$$

$$\text{Temperature reduction of air} \dots 9^\circ \text{ F. d.b.}$$

$$\text{Temperature of air entering pre-cooling coils} \dots 83^\circ \text{ F. d.b.}$$

STEP NO. 5  
Determine amount of water required through the pre-cooling coils.

The amount of water required for pre-cooling depends upon the temperature rise of the water as it passes through the pre-cooling coils. This temperature rise is generally figured between 6° and 10°.

Assume in this case a 6° temperature rise.

$$\text{B.t.u./hour of sensible heat} =$$

$$500 \times \text{temp. rise}$$

$$\text{gallons of water per minute.}$$

$$(500 = 8.33 \text{ lbs. per gal.} \times 60 \text{ minutes.})$$

$$84,584 \text{ B.t.u./hour} =$$

$$500 \times 6^\circ$$

$$28 \text{ gallons of water per minute.}$$

The amount of water required is 28 g.p.m. entering at 62° F. The water temperature leaving the pre-cooling coils in this case is  $62^\circ + 6^\circ = 68^\circ \text{ F.}$

#### STEP NO. 6

Determine the face area of the pre-cooling coils.

For pre-cooling the velocity of the air through the coil should be assumed between 450 and 500 f.p.m.

This is the face velocity.

Assume in this case 500 f.p.m. face velocity.

$$\text{c.f.m. through coil} =$$

$$\text{f.p.m. face velocity} \times \text{square feet of face area.}$$

$$8,600 \text{ c.f.m.} =$$

$$500 \text{ f.p.m.} =$$

$$17.2 \text{ sq. ft. face area.}$$

The face area in this case is 17.2 sq. ft.

#### STEP NO. 7

Determine the logarithmic mean temperature difference of MED.

$$\text{Air in } 83^\circ \text{ Air out } 74^\circ$$

$$\text{Water out } 68^\circ \text{ Water in } 62^\circ$$

$$15^\circ d_1 \quad 12^\circ d_2$$

$d_1$  = greatest temperature difference

$d_2$  = least temperature difference

Referring these figures of 15 and 12 to Chart 3, the MED is 13.

(To Be Continued)

### Thread Co. Installs New \$75,000 Cooling System

EAST ALBANY, Ga.—Vice President A. J. Morse revealed that a \$75,000 evaporative cooling system has been installed for the main mill and box shop at Clark Thread Co.'s finishing plant here.

The American Moistening Co. of Providence, R. I. installed the system, which provides a complete change of air in the mill every five minutes.

### SAVE ROOM—SAVE INSTALLATION COSTS

by using A-B Combination Motor Starters



ALLEN-BRADLEY MOTOR CONTROLS  
for Air-Conditioning and Refrigeration.  
Manual & automatic across-the-line starters.  
Compression-type velvet-smooth starters.  
Pressure and temperature switches & controls.  
Relays and contactors from 1 to 8 poles.  
Push buttons and selector switches.



ALLEN-BRADLEY  
SOLENOID MOTOR CONTROL  
QUALITY

Disconnect unit and magnetic starter are contained in ONE compact cabinet. Ideal for air-conditioning and refrigeration jobs, because the Bulletin 712 Combination Starter takes less room, saves wiring, speeds up installation, and affords added safety in operation. Cabinet cannot be opened unless disconnect lever is in OFF position.

Starter and disconnect unit both have silver alloy contacts which need no cleaning, filing, or dressing. Send for Bulletin 712. Allen-Bradley Co., 1313 South First Street, Milwaukee 4, Wisconsin.

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Doors  
NEW  
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## Acoustical Ceiling Replaces Ordinary Vents For Air Conditioning In International Mart

### Doors and Corridors Serve as Return Air Vents and Ducts

NEW ORLEANS—Distribution of air through acoustical ceilings instead of conventional vents is the principal feature of the year-around air conditioning system installed in the new International Trade Mart here.

The five story building is completely sealed with glass brick windows and has an exterior of concrete and glass block. It contains 170 office units occupying approximately 76,000 sq. ft. of space.

Since the structure has no outlets except doors, soundproofing throughout was essential to counteract the reverberations usually absorbed by windows. In designing the air conditioning system, the firm of Rathbone DeBuys-Godat & Heft decided to take advantage of the Johns-Manville acoustical ceilings with their tiny ( $\frac{1}{32}$  in.) perforations as distributing surfaces.

To achieve this, sheet rock was attached to the lower side of the joists and below it was attached the acoustical blanket, forming a plenum chamber between the blanket and the acoustical ceiling. Conditioned air is introduced into the chamber, in which a slight pressure is maintained. This type of supply system is claimed to provide an even flow of air without drafts.

To equalize the amount of airflow and to take care of varying outside exposure loads, the floors are zoned off. Separate blowers feed each zone.

Three 7-ton Chrysler Airtemp compressor units and a Kewanee hot water system are located in the ground floor boiler room. The pumps

force chilled or heated water to two coil units on each of the five floors where American Blower Corp. blowers—taking in 20% fresh air and 80% recirculated air, feed into the false ceiling "ducts."

For returning air, floor-level vents in each office door open into the corridors. Acting as ducts, the corridors return the air through large vents into the blower room and blowers.

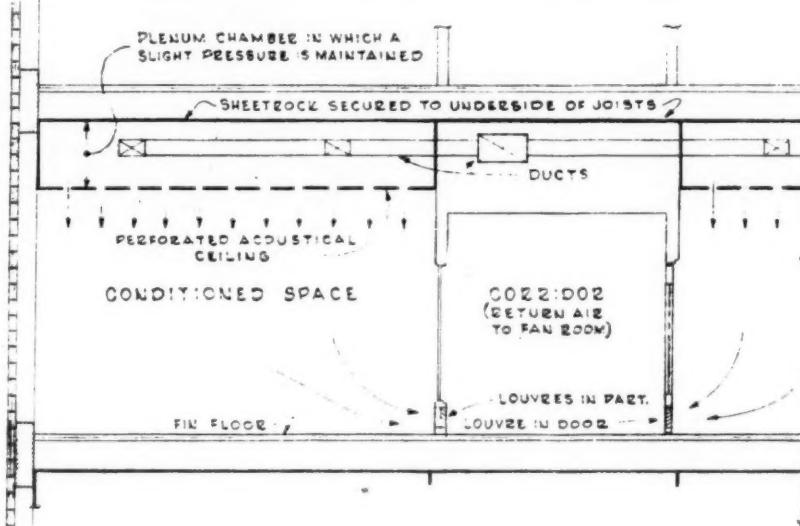
Johnson Service thermostatic controls in the corridors control the temperature and humidity in the building by varying the flow of chilled or heated water.

Other components of the system, installed by Mayer Godchaux, include McQuay cooling coils, Buffalo Forge pumps for the hot and cold water and the condenser, American Air Filter filters, Acme water chillers, a Marley cooling tower, Allis Chalmers fan motors and drives, John Zink gas burners, and Allen-Bradley starters.

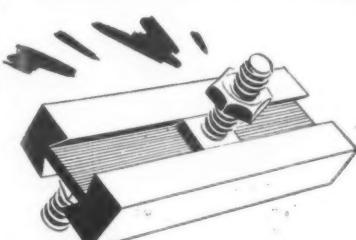
The Mart is designed to facilitate commerce between the Mississippi Valley and the nations of the world. Firms in 34 states and 10 foreign countries were on the roster of tenants when the Mart was opened July 6. In the first 15 days, 10 new tenants were accepted and four of the original lessees applied for additional space.

All products on display at this global trading center are for sale on the spot and must be available for export or import. This ruling is designed to prevent the Mart from becoming a mere exhibition place and further its true function of stimulating international trade.

### Construction Details of One Floor

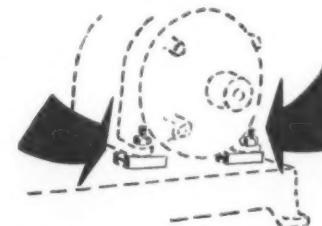


This view shows the construction details of one of the floors in the new International Trade Mart in New Orleans. Shown are the plenum chamber, supply duct, perforated ceiling, and return air arrangement. The Johns-Manville acoustical ceiling is used to cut down reverberations normally absorbed by windows. The  $\frac{1}{32}$ -in. perforations, a feature of the acoustical ceiling board, were used to supplant the conventional air vents.



### Have You Tried

the Motor Base Adapter Plate?  
(3 sizes to fit  $\frac{1}{8}$  to 3 h.p. motors)



Install that motor; it fits the base—any base. No drilling or filing. No holes out of line. No rotor shaft too long or too short. Carry motors and adapters in every service car.

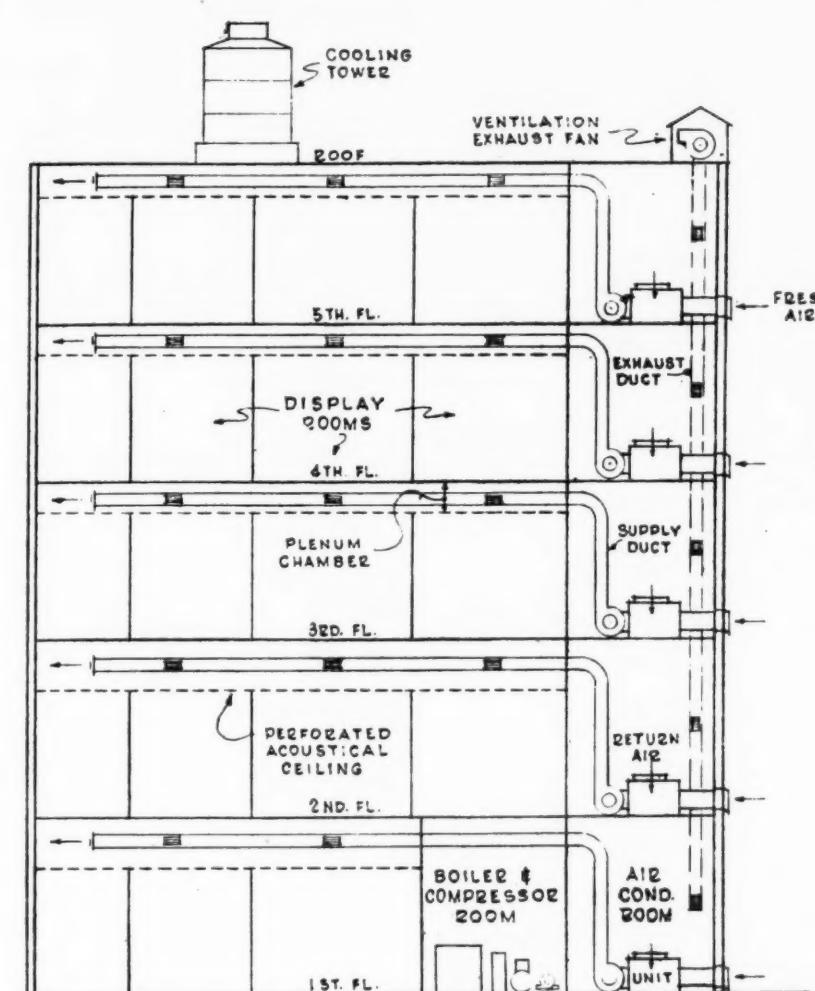
Servicemen west of the Mississippi contact these wholesalers:

Associated Refrig. & Equip. Co. Sacramento, Calif.	Joplin Supply Co. Joplin, Mo.	Refrigeration Equipment Co. Kansas City, Mo.
Authorized Refrig. Parts Co. St. Louis, Mo.	Macklanburg Supply Co., Inc. Oklahoma City, Okla.	Refrig. & Indust. Supply Co. Minneapolis, Minn.
Authorized Supply Corp. Los Angeles, Calif.	McCombs Refrig. Supply Co. Denver, Colo.	Refrig. Supply Distributors Los Angeles, Calif.
Brass & Copper Sales Co. St. Louis, Mo.	Mideke Supply Co. Oklahoma City, Okla.	Refrigerative Supply Co. Seattle, Wash.
Kansas City, Mo.	Nelson, N. O., Co. St. Louis, Mo.	Portland, Oregon
Bristol Refrig. Supply Co., Inc. St. Joseph, Mo.	Jefferson City, Mo.	Superior Refrig. Supply Co. Kansas City, Mo.
Dennis Refrig. Supply Co. Omaha, Nebr.	Houston, Texas	Thompson, R. E., Co. St. Louis, Mo.
Saint City, Iowa	Pueblo, Colo.	Wyatt R. Brown Co. San Francisco, Calif.
Hinshaw Supply Co. Sacramento, Calif.	Salt Lake City, Utah	
San Francisco, Calif.		

Watch future issue for other regions

**MOTOR ADAPTER CORPORATION**  
4730 JOY ROAD DETROIT 4, MICHIGAN TYLER 6-1224

### Cross-Section Shows Five Stories



The diagrammatic cross-section above shows the air conditioning units installed on each floor. Also shown in the diagram are the duct systems, plenum chambers, perforated ceilings, and ventilation exhaust fans.

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Rome Water Cooled Condenser Coils insure trouble-free condensing equipment. Used by leading compressor manufacturers

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Refrigeration Booklet

JAS. P. MARSH CORP.  
Dept. O, Skokie, Ill.

ITS NYLON SEAT DISC . . . .  
*Ends* YOUR SEATING TROUBLES

THE EASIEST AND  
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MADE FOR REFRIG-  
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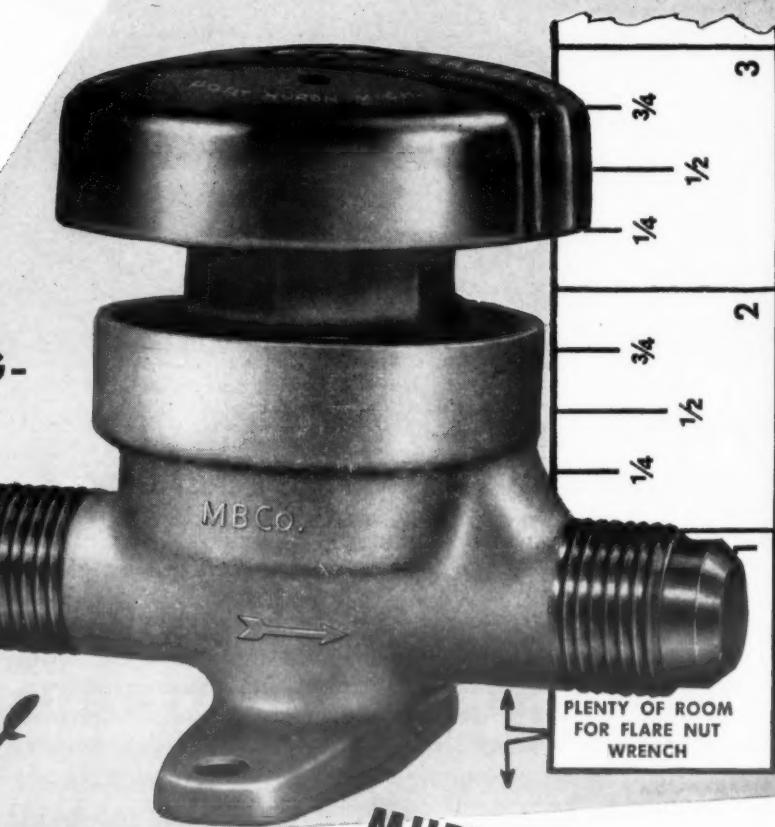
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line valve...

Molded nylon is the seat material for which the valve industry has been searching for years.

Molded nylon seat disc will stand up to regular charging board usage.

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**BRASS CO.**

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*MUELLER BRASS CO.*

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- Phosphor bronze and stainless steel diaphragms.
- Ports-in-Line.
- Large Hand Wheel.
- No Springs.

AVAILABLE NOW  
ORDER FROM YOUR WHOLESALER

## Students Service Units That Keep Lunches for Other Students

SYRACUSE, N. Y.—Lunches for students returning to city schools are being kept fresh and cool with refrigeration equipment which is maintained by still another group of students.

They are members of the refrigeration course given at the Hurlbut W. Smith Technical & Industrial School.

These students have installed new refrigeration equipment at Nottingham and Central schools, and are planning to begin work soon at the North school. In addition, they will keep equipment in repair for the 29 city schools which have refrigeration units.

Under the direction of Rexford Metzler, teacher of the class, the students dismantled the old equipment at the two schools and replaced it with multiple systems. They installed solid counters for the serving line and milk coolers in addition to reach-in coolers which are being used in the school kitchen.

## Ernst Named Eastern Sales Agent for Refrigeration Corp.

NEWARK, N.J.—Appointment of Jack Ernst, a director of the Pennsylvania, New Jersey, and Delaware Ice Cream Manufacturers Association, as eastern regional sales representative for Refrigeration Corp. of America has been announced here by Edward R. Legg, president of the company.

Ernst, who has had 20 years experience in the ice cream field, was formerly with Anheuser-Busch Co. and Liquid Carbonic Corp. He will make his headquarters in Philadelphia.

## Cross, Jessel Get Thermal Co. Divisional Management Posts

ST. PAUL—Thermal Co., Inc., distributor here has announced the recent appointment of Thomas F. Cross as Wisconsin division manager, and the appointment of Henry J. Jessel as divisional sales manager in Milwaukee.

John Eagle continues as store manager at Milwaukee, according to the announcement.

## Warm Air Heating Group Completes Revision of All Manuals, Work Sheets

CLEVELAND—The completion of the revision of all manuals published by the National Warm Air Heating & Air Conditioning Association was announced at the recent mid-year convention of the association by W. D. Redrup of the Majestic Furnace Co., Huntington, Ind., chairman of the association's Installation Codes and Application Engineering Advisory Committees.

Manuals revised since the December, 1947 meeting of the association were Manual 9—Code and Manuals for the Design and Installation of Warm Air Winter Air Conditioning Systems (for buildings of more than 120,000 B.t.u./hr. loss), and Manual 8—A Yardstick for Classifying Warm Air Winter Air Conditioning Systems. Work Sheets 9A and 9B, which are used in conjunction with Manual 9, have also been revised.

The revisions contained in the new editions of Manuals 8 and 9 are based on the latest experience figures developed since these manuals were released a year ago.

Many contractors, it is stated, have discovered a promotional use for Manual 8—The Yardstick. Inasmuch as this manual outlines the prime points that distinguish a Good heating installation from a Poor one, these heating dealers are attaching a copy of Manual 8 with each bid or quotation sent to home planners, builders, or architects. By this means they can point out to the customer the salient points of good installations which their quotation includes.

Manuals and work sheets now available from the association are as follows:

Manual 1—How to Make a Comfort Survey—How to Make Floor Plans.

Manual 2—How to Check Frame House Construction.

Manual 3—How to Figure Heat Losses.

Manual 5—Code and Manual for Gravity Systems.

Manual 6—Service Manual for Changing Forced Air Systems to Continuous Air Circulation.

Manual 7—Code and Manual for Winter Air Conditioning Systems.

Manual 7A—Code and Manual for Ceiling Panel Systems.

Manual 8—Yardstick for Classifying Winter Air Conditioning Systems.

Manual 9—Technical Code for Warm-Air Installations In Larger Buildings.

### WORK SHEETS

Form 1—Information Blank (for all jobs).

Form 2—Heat Loss and Work Sheet (Manuals 5, 7, and 7-A).

Form 3—Short Form Work Sheet (gravity).

Form 4—Short Form Work Sheet (winter air conditioning).

Form 9A—Heat Loss Sheet (Manual 9).

Form 9B—Branch and Stack Sizing (Manual 9).

Form 9C—Trunk Duct Sizing (Manual 9).

Prices and information about this material may be obtained by writing to the National Warm Air Heating & Air Conditioning Association, 145 Public Sq., Cleveland.

**It takes but a minute—requires no tools:** The "B" cone or inner element of the diffuser is secured to the combined suspension and adjustment screws by a springloaded catch which is kept in compression by a slotted washer. The holes in "B" cone pass over the bolt heads. All you do is press up on cone "B" and insert or remove the slotted washers.

## Bulk Chrome Plating Process Reduces Special Handling Costs

DETROIT—The Midwest Chrome Process Co., 83 East Milwaukee Avenue, here, is announcing a new service for chromium plating small parts such as screws, rivets, screw machine parts, stamping, etc.

It is stated that parts are processed in bulk—without racking—throughout the entire plating cycle, and that costly individual handling of each small piece is eliminated.

The chromium coatings produced by the bulk have a high luster.

Available from 1/2 to 10 H.P.

**CLEANABLE DOUBLE-TUBE COUNTER-FLOW WATER-COOLED CONDENSERS**

Write for literature

Halstead & Mitchell  
BESSEMER BLDG.  
PITTSBURGH 22, PA.

## Richman Becomes Western Sales Manager for Fogel Refrigerator

PHILADELPHIA—Appointment of Harry Richman as western sales manager for Fogel Refrigerator Co. has been announced by William Fogel, president of the firm.

Richman will cover all territory west of the Mississippi River with his headquarters in Los Angeles. He has been associated with the commercial refrigeration industry for 20 years.

## Humorously Written Book Gives Data on Vacuum Measurements

BETHAYRES, Pa.—George E. Fredericks Co. here has recently published a 28-page booklet on vacuum measurement, entitled "Much Ado About Nothing."

Humorously written in simple language, the book is intended for the layman engaged in industrial processes using vacuum measurement.

## Brochure Describes Gould Air Conditioning Battery

TRENTON, N. J.—Detailed data on the Gould "Kathanode" battery for air conditioning and car lighting is presented in a new two-color brochure, No. GB-780, prepared by the Gould Storage Battery Corp. here.

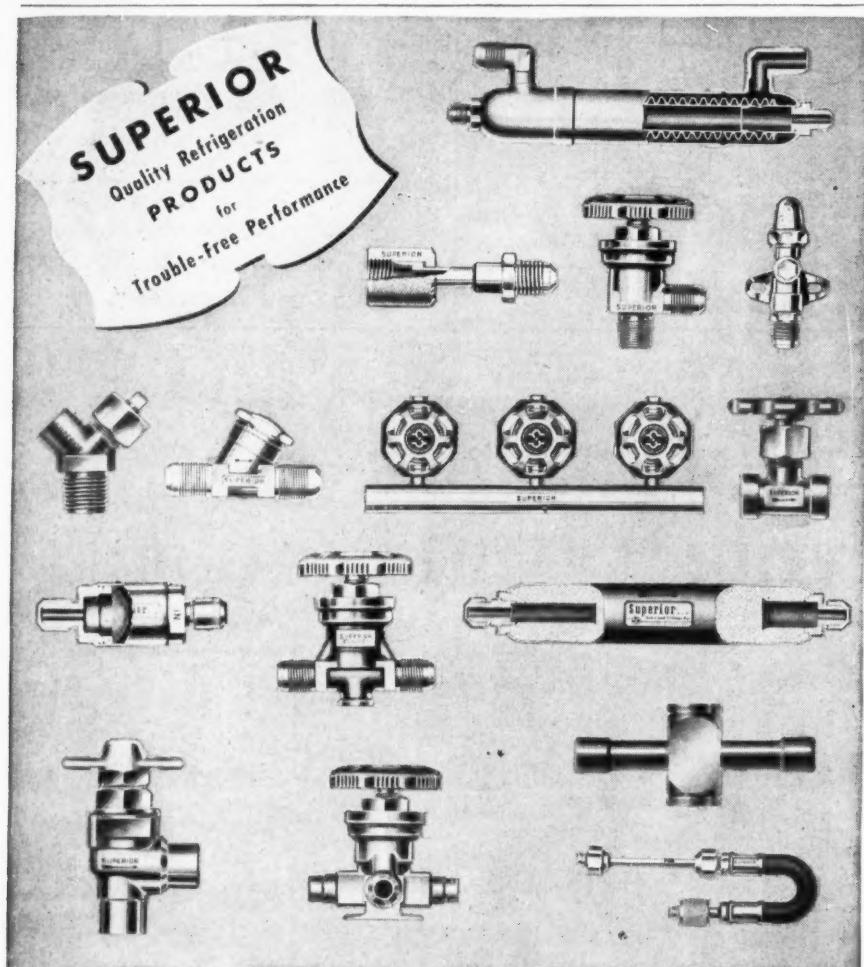
A special feature is a giant exploded view showing construction features of the battery with emphasis on the triple insulated positive plates claimed to give a balanced design with ample reserve power for the high rates required by modern air conditioning equipment.

Engineering specifications for 17 battery sizes shown in the brochure include: (1) ampere hour capacity for eight and three-hour periods of use, (2) finish charge rates, and (3) dimensions and weights for two and four-cell units.

## A. B. Cole To Represent Savage Arms Refrigeration Division

NEW YORK CITY—Arthur B. Cole has recently announced that he will represent the refrigeration division of Savage Arms Corp.

Cole was formerly with Gross Distributors, Inc. and Schaefer Products.



## Designed and Engineered for Maximum Performance...

In all refrigeration and air-conditioning systems, the SUPERIOR line includes the famous Diaphragm Packless Line valves; globe charging, purging or drain valves; hand expansion valves; pressure cup (wing cap) globe valves; packed line, angle, compressor and cylinder valves; check valves; liquid indicators and sight glasses; quick couplers; gauge manifolds; economizers (heat-exchangers) and manifolds; dehydrators and filters; rapid-chargers (refrigerant transfer systems); charging hose; and SAE flare fittings.

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**Instant Cleaning and Inspection:** With the new quick-opening Type HD set-lock assembly, the inner element of the Kno-Draft Adjustable Air Diffusers can be quickly removed and re-installed while the diffuser is in place without affecting its adjustment.

**It takes but a minute—requires no tools:** The "B" cone or inner element of the diffuser is secured to the combined suspension and adjustment screws by a springloaded catch which is kept in compression by a slotted washer. The holes in "B" cone pass over the bolt heads. All you do is press up on cone "B" and insert or remove the slotted washers.

### FREE HELPFUL LITERATURE

- Bulletin K-21: Details on Type HD Set-Lock Assembly.
- New handbook on air diffusion: Shows how to create "custom-made" air patterns and eliminate drafts.

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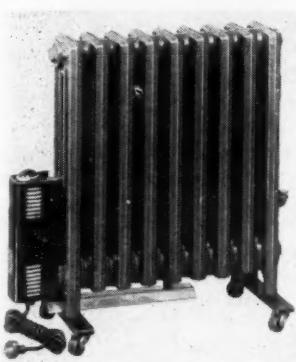
IN CANADA: Douglas Engineering Co., Ltd., 190 Murray Street, Montreal 3, P.Q.

## The Low-Temp Patrolmen!



**HIGHSIDE CHEMICALS COMPANY**  
195 VERONA AVE., NEWARK 4, N.J.

# What's New



## Burnham Radiator Line Provides 6 Heat Ratings

NEW YORK CITY—Recently reintroduced are the Burnham Electric Steam Radiators, made in six models—three portable and three stationary. The Burnham line makes available a total of six different heating output ratings, according to the manufacturer.

All models are available for a.c. or d.c. operation with 110 or 220 volts. Output ranges from 1,000 watts to 3,000 watts, the company pointed out.

## Float Valves Can Install Above, Below Water Level

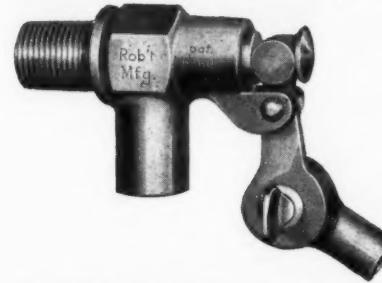
LOS ANGELES—Production of two new positive-action Bob float valves that are designed to maintain any desired water level in evaporative coolers is announced by the Robert Mfg. Co., 4004 W. Jefferson Blvd. here.

Robert engineers have developed two valves that can be installed above or below water and are claimed to operate without leaking, dripping, or chattering.

The valves are precision-machined and have a ratcheted actuating lever that maintains the water at any level for which it is set. The valve plunger is equipped with replaceable soft rubber disk and leather cup-leather. The positive action of the valves is controlled by the design of the rocker arm and plunger assembly.

The valve that is designed to be submerged in water is tapped for  $\frac{1}{4}$  in. pipe thread for a top outlet. It is used where extreme alkali conditions require the valve to be submerged to prevent corrosion.

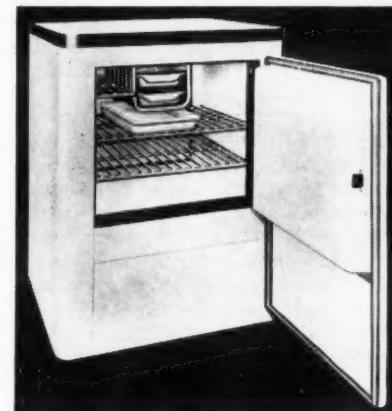
The threaded inlet on the submerged and above water valves has both a straight and tapered thread. The portion of the thread that is



Robert Mfg. above-level float valve

straight makes it possible to use a lock nut; the tapered portion permits the use of a standard pipe threaded fitting. The machined flange on the inlet connection, together with the lock nut, assures a tight wall fit.

The valve shown in the cut is for mounting above the water level. It is identical with the under-water valve, except for the outlet. In the latter it is on top.



\*\*\*

## Full Length Door Included On New Table Top Model

CHICAGO—A porcelain table top model electric refrigerator, called the Refrigerette, has been introduced here by I. R. Rozett and Associates, manufacturers and distributors of beverage coolers and refrigerators.

The Refrigerette stands 34 $\frac{1}{4}$  in. high and has 3 $\frac{1}{2}$  cu. ft. capacity. According to the manufacturer, it will hold 85 lbs. of food stuffs. It is equipped with two wire shelves and one cutaway, permitting storage for tall bottles. The chilling unit contains two trays which hold about 6 lbs. of ice cubes. With trays removed, frozen foods can be stored there.

The porcelain top is said to be stainproof and easily cleaned. The interior is of heavy baked porcelain. The door is full length, but with insulation only in the top half that fills the refrigerated cavity.

The unit is powered by a hermetically sealed condensing unit fully warranted by the manufacturer.

## Lower Price G-E Range Has Features of Deluxe Model



\*\*\*

BRIDGEPORT, Conn.—A new medium-price deluxe electric range with a high back control panel has been introduced by General Electric.

The new model, called the "Speedster," carries a recommended national retail price of \$299.95.

According to J. R. Poteat, manager

of the G-E range and water heater divisions, "The range is a completely new design with a number of improvements and yet with many features of the company's former \$360 deluxe model, including the 'Tripl-Oven'."

The Speedster range has three high-speed Calrod surface units—one of giant size—and a built-in 6-quart thrift cooker. The Tripl-Oven incorporates a master oven large enough to hold a 30-lb. turkey, a full-width 4,200-watt high-speed broiler unit, and a smaller speed oven that heats faster than any conventional range oven.

All switches are equipped with Tel-A-Cook colors, that tell at a glance which unit is on and at what speed.

Other features of the new range include a simplified oven timer that also controls one of the two convenience outlets built into the back panel; a master signal light that glows red whenever any switch is turned on; an improved No-Stain oven vent; and three storage drawers with almost 4 cu. ft. of space for storage.



the diffusers as a regular item.

Fitting between the outer rim of the diffuser and the ceiling, the anti-smudge cone provides the precise minimum separation of the air stream from the ceiling and, at the same time, complements the appearance of the diffuser.

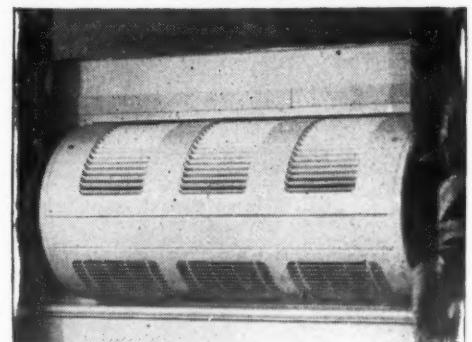
Other advantages claimed are that diffusers with anti-smudge cones require less space between the face of the duct and the finished ceiling, and that use of these cones provides far greater latitude between the ceiling opening and the outside rim of the diffuser. This means that less care need be taken in cutting ceiling openings, an advantage of appeal to the contractor.

Rubber gaskets for the joints between cone and diffuser or ceiling are available.

Anti-smudge cones are furnished for both supply and combination supply-and-return diffusers from 4 to 18-in. neck diameter.

# INCREASE SALES PROFITS AND STANDARD AIR CONDITIONING, INC. AIR PILOT'S ELECTRIC WINDOW VENTILATOR

- ★ VENTILATES
- ★ CIRCULATES
- ★ FILTERS
- ★ EXHAUSTS
- ★ SILENCES
- ★ PURIFIES\*
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**\*99%-100% BACTERIA KILL  
THROUGH 30 WATTS GERMICIDAL LAMPS**

Used in: HOMES, OFFICES, SCHOOLS, HOTELS, etc.

YOUR GAINS  
(At No Extra Cost to You)

RIGHT PRICE  
LONG DISCOUNT  
SIMPLE INSTALLATION  
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STANDARD AIR CONDITIONING, INC.  
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Gentlemen:

We are interested in your Air Pilot as

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**Filtrine WATER FILTERS**

**TASTES AND ODORS VANISH**

Filtrine Filters, in all applications, assure sparkling water — clean to the eye, stimulating to the palate, free of objectionable odors — the kind your customers expect from their coolers!

SELL A FILTRINE FILTER WITH EVERY COOLER ... A NATURAL PROFIT-MAKING TIE-IN!

Several choice areas available for manufacturers' representatives.

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53 Lexington Ave., Brooklyn 5, N.Y.  
Manufacturers of Coolers & Filters for over 40 Years

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REFRIGERATION, INC.

- FARM AND HOME FREEZERS
- REACH-IN REFRIGERATORS
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DIVISION OF WILSON CABINET CO., INC.  
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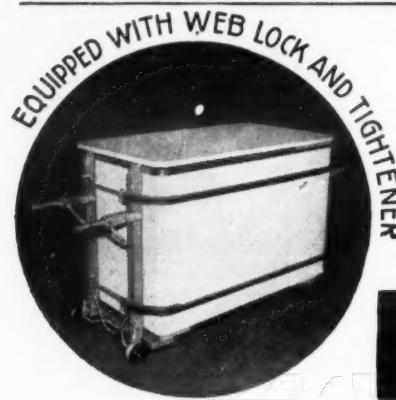
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Solve Your Problem with the New  
**ROLL-OR-KARI Dual Trucks**

Patented Step-On-Lift • Folding Handles  
Capacity 1000 Lbs. • Shipping Weight 40 Lbs.

WRITE TODAY

**THE ROLL-OR-KARI CO.**  
MANUFACTURERS  
ZUMBROTA • MINNESOTA

One of a series of messages to help you increase your understanding of business paper advertising, and its effect on your job.

## How much would NO advertising cost your company ?

SOME COMPANIES look upon advertising as an expense. When expenses have to be cut, the advertising budget looks like a good place to begin.

The only trouble with that theory is — it won't work.

Advertising can become expensive when you don't use enough of it. And "NO advertising" can cost far more than the "saving" it appears to create.

It's like failing to lubricate a piece of valuable machinery. You save the

cost of the lubricant — but eventually there's a big repair bill to pay, not to mention your production losses while the machine is idle.

Advertising works something like a machine. It is the application of assembly-line methods to the five basic steps in the manufacture of a sale —

1. Seeking out prospects
2. Arousing their interest
3. Creating a preference for your product
4. Making a specific proposal
5. Closing the order

## How To Service Room Air Conditioners (6) Checking & Servicing Air Handling System

The following is the sixth instalment of a series which offers general service data on room air conditioners. It takes up a new phase—service problems involving the air handling function of room air conditioners. The material, which can be generally applied, was prepared from data supplied by Philco Corp.

### AIR MOVEMENTS FOR COMFORT

A slight motion in the air is always desirable for comfort, especially during warm seasons. When the body is enveloped in still air, a layer of warm and somewhat humid air envelopes it.

A slight air movement not only blows this enveloping layer of air away from the body but also seems to have a stimulating action on the sensory nerves; however, when the air velocity is so great as to be distinctly noticeable, serious results may occur from drafts.

The air velocity which can be tolerated with comfort by persons at rest is approximately 2 ft. per second.

Controlled motion and distribution of air are important factors of air conditioning. The efficiency with which air conditioning units perform these functions depends upon the type of fan used to create an air pressure and upon the free passage of air through the conditioner.

A fan is necessary to provide air circulation except in a very limited and simplified system where convection circulation may be sufficient. Clean ducts and clean filters are necessary for the free passage of air through the conditioner unit.

### TYPES OF FANS

Fans for air circulation are of two types:

1. Propeller type (used in some Philco units).
2. Centrifugal type.

Propeller types follow airplane practice to a certain extent in that the blades are designed with a varying angle, the angle increasing from tip to hub.

Centrifugal fans are used in most Philco air conditioners, and are of the "squirrel cage" type. These fans consist of a number of curved blades attached to radial arms or to a disk through which the drive shaft passes.

The following are general rules concerning the characteristics of centrifugal fans:

1. The horsepower varies directly as the cube of the fan speed in r.p.m.
2. The pressure varies directly as the square of the fan speed in r.p.m.
3. The capacity in c.f.m. varies directly as the fan speed in r.p.m.

The main function of any fan is to increase the pressure of the air which it handles, in order to force the air through ducts, filters, and grilles. Since the air is used at relatively low pressure it may be assumed that the air passing through the fan has uniform density. The quantities involved in fan performance are volume, pressure, and the horsepower required to drive the fan at its rated speed.

Volume is the amount of air handled in unit time and is usually expressed in cubic feet per minute (c.f.m.).

Total pressure may be divided into static pressure and velocity pressure, total pressure being the sum of these two. Pressure, in dealing with fans, means that the fan is imparting energy to the air. Static pressure is potential energy—the energy of air compressed in container and available for conversion to mechanical work. Velocity pressure is kinetic energy—the energy of particles of matter in motion.

Total air pressure is the sum of the static and velocity pressures and is usually measured in inches of mercury or inches of water.

### LOW-PRESSURE MEASUREMENTS

High pressures are usually expressed in "pounds per square inch" while the low pressure created by fans is measured in "inches of mercury" or "inches of water."

The term "inches of vacuum" used in connection with a compound gauge refers to the height of a mercury column supported by atmospheric pressure (as in a mercurial barometer). Since atmospheric pressure is roughly 15 lbs. per sq. in. (corresponding to a mercury column of approximately 30 in.) it is clear that 2 in. of mercury equals about 1 lb. per sq. in.

The simplest instrument for measuring very low pressure is a glass tube bent in the form of the letter "U." When such a tube, called a manometer or U-tube, is partly filled with water and one end connected with a rubber tube to the container in which the pressure is desired, there will be observed a difference in the level of the liquid corresponding to the pressure.

By measuring the difference in inches between the level of the water in the closed and the open sides of the U-tube and multiplying this difference by the weight in pounds of 1 cu. in. of water, the result is the difference in pressure (pounds per sq. in.) between that in the container and atmospheric pressure.

### RECIRCULATED AIR IN AIR CONDITIONING

The refrigerating load varies with the amount of air recirculated in a room; the more recirculated room air, the less the load will be. With 75% recirculation of room air, the amount of refrigeration required is only about half of that required if the unit handles 100% outside air.

Since the refrigeration required varies so greatly with the percentage of recirculation, it is important to use as little outside air as possible to maintain comfortable conditions in the room. The amount of fresh air required for proper ventilation depends to a great extent on the number of occupants in the room.

### AIRFLOW PATHS

Circulating the air in a room is an important function of all single room air conditioner units. The efficiency with which the unit performs this function depends primarily upon how freely the room air can flow through the air passages of the conditioner.

### AIR-COOLED MODELS

There are two primary airflow paths through a typical, air-cooled single-room conditioner.

1. Room air to be cooled is drawn by a fan through the room air inlet grille, the filter, and the evaporator. The filtered, cooled, and dehumidified air is then expelled to the room through the conditioned air outlet grille or grilles.

2. Outside air to cool the condenser is drawn into the conditioner, is circulated over and around the motor and compressor, and is then forced along an air-stream path to the condenser. This forced air (created by a blower fan located on the extended shaft of the compressor motor) in conjunction with the evaporator heat vaporizes the condensed moisture from the evaporator.

At this point, vapor and motor-compressor air streams join, and both are forced through the condenser to the outside of the building.

In addition to these two primary airflow circuits, control dampers are usually provided to permit outside air to be drawn in, filtered, and mixed either with cooled room air when desired, or with uncooled room air when complete air cooling is not required.

Many air conditioner models are equipped with an additional damper control which can be positioned so that stale or smoke-laden air may be pumped from the room to the outside of the building.

### WATER-COOLED MODELS

If a water-cooled model is installed without access to outside air, there will be two air stream paths through the conditioner. Their functions will not be the same as for the air-cooled models, since the water-cooled models do not require outside air for condensed evaporator-moisture disposal and condenser cooling.

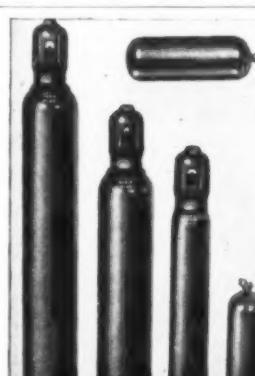
The general function of the cooling circuit is the same as in the air-cooled models.

1. Room air passes through the filter and evaporator where it is cooled, filtered, and dehumidified and is then returned to the room through the conditioned air outlet grilles.

2. The only function of the other air stream path is to cool the motor-compressor compartment. This cooling is accomplished by circulating air between the loops of a water-tube coil, or compartment-cooling coil, thus transferring the heat from the warm air to the cold water in the coil. Condensed moisture is disposed of through a line connected to the house drainage system.

If a water-cooled model is installed with access to outside air, an air duct assembly may be installed to provide outside air for ventilation and room air pump out if this feature is incorporated in the unit.

(To Be Continued)



### "SEAMLESS" REFRIGERANT CYLINDERS

Built and stamped to ICC 3B-300 specifications.

Seamless construction of heavy gauge metal.

Tested with hydrostatic pressure.

Extra large capacities. Glossy red prime lacquer finish.

Supplied complete with valves, caps, etc., as required.

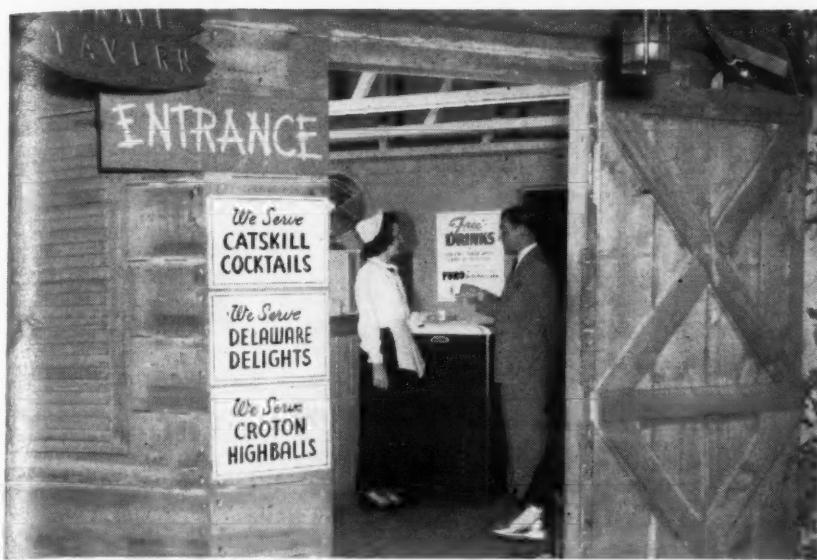
Improved "ERECT" style in 5# size.

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### AIR CONDITIONING & REFRIGERATION NEWS

is a member of The Associated Business Papers, who have published an interesting folder entitled, "How much does NO advertising cost?" We'll be glad to send you a copy. Also, if you'd like reprints of this advertisement (or the entire series) to show to others in your organization, just say the word.



**The Drinks Are On Puro**

Puro's "Rip Van Winkle Tavern" drew crowds at the New York City golden anniversary celebration.

**Water Cooler 'Tavern'**  
**Popular at NYC Show**

NEW YORK CITY—Free "Catskill Cocktails" from a rustic booth known as "Rip Van Winkle Tavern" attracted plenty of attention at Gotham's recent Golden Exposition held at Grand Central Palace.

Sponsor of the working exhibit, which consisted of five electric water coolers from which feminine attendants served, was the Puro Filter Corp. of America.

The booth's effectiveness as a promotion was increased, Puro officials said, by the coincidence of a heat wave during New York's 50th anniversary celebration. High temperatures made the exhibit a welcome stopping-off place for exposition visitors in search of a cool drink of water. Women dressed in Dutch costume did the serving.

**'Tight' Controls--**

(Concluded from Page 1, Column 4) ironers, washing machines, combinations of any of these, air conditioners, vacuum cleaners, sewing machines, radios, television sets, phonographs, and combinations.

It does not affect instalment sales involving less than \$50 or more than \$5,000.

In all contracts that involve more than \$50—including delivery, installation, or service charges, accessories, and sales taxes but excluding interest, finance, or insurance charges—at least 20% of the selling price must be paid down and the balance paid in 15 months or less.

When the contract amounts to \$1,000 or up to \$5,000, the balance must be paid in 18 months and in monthly instalments of \$70 or more. When the monthly instalments would be below \$70 if the contract were spread over 18 months, the number of months to pay must be reduced until the payment is over \$70.

Clifford Simpson, managing director of the National Electrical Retailers Association, reported that he and Jim Cook, eastern field director for NERA, recently discussed pre-trials and the renting of appliances with FRB officials here.

They were advised, Simpson said, that there is little chance of eliminating the non-rental clause from the regulation, but that they might suggest ways to amend the pre-trial clause.

The Board pointed out to them, he added, that "it is their desire to discourage instalment selling." The

**Reputation Must Be Earned**

Only sound engineering and precision craftsmanship could build the enviable reputation for trouble-free performance that marks Ranco Refrigeration Controls. And only continuous development of even better controls can maintain that reputation. The new Ranco beryllium copper power element is typical of the never-ending search for improvement that has established Ranco as the leader. Ask your Ranco wholesaler to show you this new, exclusive power element, and the complete line of Ranco Refrigeration Controls.



World's Largest Manufacturers of REFRIGERATION CONTROLS

**Leagues' Program--**

(Concluded from Page 1, Column 5) ness session will be held Saturday morning.

Following is the preliminary program:

**WEDNESDAY, SEPT. 29****Morning Session**

Chairman: Ralph Neumuller, executive vice president, Electrical & Gas Association of New York, Inc.

9:15—Registration.

10:30—Conferees' welcome to Washington—J. S. Bartlett, commercial manager, Potomac Electric Power Co.

10:45—President S. E. Strunk's address.

11:15—(Title of address to be announced later)—Donald A. Young, legislative coordinator, Chamber of Commerce of the United States.

12:15—Luncheon. Address on television by speaker to be announced later.

**Afternoon Session**

Chairman: V. W. Hartley, managing director, Pacific Coast Electrical Association, Inc.

2:00—(Title of address to be announced later)—T. J. Newcomb, chairman, executive committee, National Adequate Wiring Bureau, and sales manager, Electric Appliance Division, Westinghouse Electric Corp.

2:20—"I Can't Afford It—Can You?"—Carl H. Christine, secretary-manager, St. Louis Electrical Board of Trade.

3:00—Address on food freezers (speaker to be announced).

4:00—"More Power to America"—(a moving picture presentation of a program of coordinated action to increase the efficient use of electricity in industry)—F. W. McChesney, Industrial Divisions, Apparatus Department, General Electric Co.

5:30—Sociability hour for conferees.

**Evening Session**

Chairman: A. H. Kessler, manager, North Central Electrical Industries, Inc.

8:00—Informal session to provide an opportunity for the discussion of league problems by league managers and their staff members.

**THURSDAY, SEPT. 30****Morning Session**

Chairman: J. J. Dore, managing director, Nebraska-Iowa Electrical Council.

9:15—"Appliance Retailing 3 Years After the War"—A. P. McNamee, manager, Appliance Department, McCall's Magazine.

10:15—"Tombstones and Touchstones" (an approach to sales training)—A. W. Peterson, western manager, Utility Division, Hotpoint, Inc.

11:00—Electric Shows and Exhibits for the Public and the Trade—J. C. Chamberlain, secretary-manager, Bureau of Radio & Electrical Appliances of San Diego County; P. L. Heath, manager, Electric League of Western Pennsylvania; W. J. Quinn, managing director, Southern California Radio & Electrical Appliance Association; A. H. Kessler, manager, North Central Electrical Industries, Inc.

12:15—Luncheon. Address on the power outlook nationally by speaker to be announced.

**Afternoon Session**

Chairman: J. Clark Chamberlain, secretary-manager, Bureau of Radio & Electrical Appliances of San Diego County.

This is a special session for league managers and their staff members, to be held in The Playhouse, Pepco building.

2:00—"How the Playhouse Operates" (a description of the operation of the institute's new demonstration theater)—W. G. Hills, managing director, Electric Institute of Washington.

2:30—Discussion of manpower and material problems in farm electrification, what's new in league sales training activities, comments on electrical interdependence movement, new ideas on major appliance promotion, new angles on the conduct of lamp and lighting promotion.

Among those who will discuss these subjects are J. Clark Chamberlain, San Diego; V. W. Hartley, Los Angeles; J. R. Guidroz, New Orleans; J. J. Dore, Omaha; S. E. Strunk, Cleveland; A. H. Kessler, Minneapolis; J. J. Waddell, Boston; P. J. McMillan, Chattanooga; and W. J. Quinn, Los Angeles.

**Evening**

7:00—Informal dinner for conferees.

**FRIDAY, OCT. 1****Morning Session Only**

Chairman: C. H. Christine, secretary-manager, St. Louis Electrical Board of Trade.

This is a special session for league managers and their staff members.

9:15—"The Federal Trade Commission and You"—George P. Lamb, partner, Kittelle & Lamb.

10:15—League activities and operation problems. Among the subjects suggested for discussion are suggestions for selling ventilating systems, the league bulletin as a good public relations medium, and how can leagues meet increasing calls of requests for their booklets.

**Afternoon**

Reserved for sightseeing trips.

**SATURDAY, OCT. 2****Morning Session Only**

Chairman: S. E. Strunk, president.

9:15—I.A.E.L. business session.

**Bendix Launches \$65,000 Contest****To Promote Automatic Soap Injector**

SOUTH BEND, Ind.—Bendix Home Appliances, Inc. on Oct. 10 will launch the first of six weekly contests offering a total of 565 prizes worth \$65,000.

Sales officials predicted a two-way payoff: for the 565 winners—prizes ranging from a 12-day winter cruise to Hawaii, the grand award, to television or radio phonograph sets, refrigerators and ranges; for the dealers—many thousands of prospective purchasers of an automatic washer because to qualify every contestant must witness a demonstration.

First prize in each weekly contest is a four-door, super-six Hudson sedan. Winners of first prizes are eligible for the grand award, the free trip for two to Hawaii on a Matson Line luxury liner, seven days at the Royal Hawaiian hotel in Honolulu, air trip home, \$250 spending money, and all expenses paid.

The contest will be supported by full-page, two-color advertisements in *Life* and *The Saturday Evening Post*, newspaper advertising for individual and joint signatures, and a number of sales promotional devices designed to

draw contestants to dealer's stores—where they will receive a demonstration and the official entry blank.

Prize-seekers are asked to complete in 25 words or less this statement: "I like the Bendix automatic soap injector because . . .".

"Runner-up" prizes each week of the contest, numbering 93, include: three second prizes of television sets or radio phonographs, 10 third prizes of refrigerators with frozen food compartments, 10 fourth prizes of electric ranges, 10 electric blankets with dual controls, 10 automatic coffee brewers, 25 automatic toasters, 10 electric irons with steam attachments, and 15 fountain pen and automatic pencil sets.

**New Warm Air Heating Equipment Firm Files Papers In Buffalo**

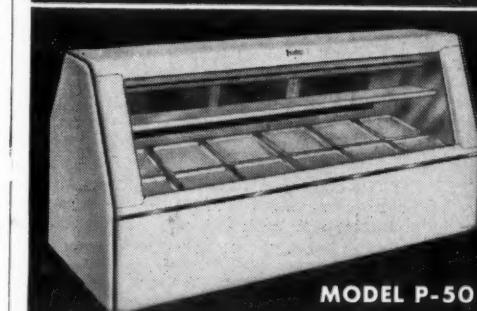
BUFFALO—A certificate of partnership has been filed in the Erie County clerk's office for the Schaefer Warm Air Heating Equipment Co., 150 Clinton St., Buffalo. Partners are John B. Alen and Joseph G. Heber.

**WANTED  
REFRIGERATION ENGINEER**

We require an engineer to take complete charge covering design, rating and development of low sides for commercial refrigeration. Our company is thoroughly established and financially responsible with national coverage. Limited amount of traveling necessary and we prefer someone who can fly company Navion, or is willing to learn.

Give complete history of yourself including photograph if available. Location—Midwest. Your reply will be strictly confidential.

Box 2933, c/o Air Conditioning & Refrigeration News  
450 West Fort Street, Detroit 26, Michigan

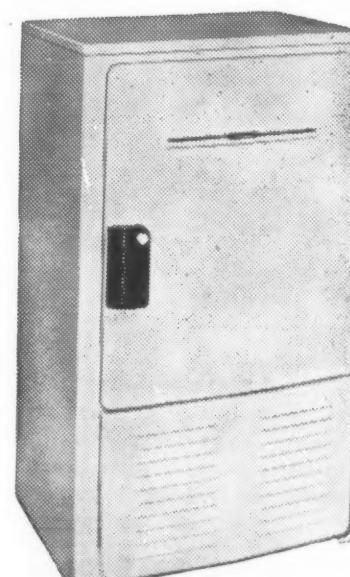
**DOUBLE-DUTY DISPLAY CASE****IMMEDIATE DELIVERY**

Available in 6 ft. and 8 ft. sizes. Porcelain exterior. Stainless steel interior. Mezzanine shelf. One piece, hard rubber, service doors with triple, non-fogging glass. Free-flow air circulating refrigerating system. JORDON "Moist-Cold" Coils. Brilliant, cool, fluorescent illumination. Heavy-duty construction and insulation. Other styles and sizes available at once.

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AMERICA'S MODERN COMPLETE LINE

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**SANITARY'S NEW  
4 cu. ft. Electric Refrigerator  
is now available.**

No. TE46—23 1/4" W. x 20 1/2" D. x 41" H.  
200 lb. Shipping Weight.

**SANITARY REFRIGERATOR COMPANY**

FOND DU LAC, WISCONSIN  
ICE REFRIGERATORS FOR MORE THAN 40 YEARS  
QUICFREZ FARM LOCKER PLANTS SINCE 1939

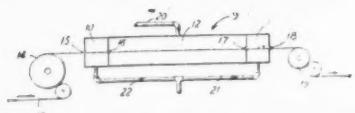
**CHECK with  
Ranco FIRST****Specialists In  
Refrigeration****\* More Ranco Controls  
In Use****\* Dependability****\* Less Stock To Carry****\* Greater Customer  
Satisfaction****\* More Profit For You**

# PATENTS

Week of June 29

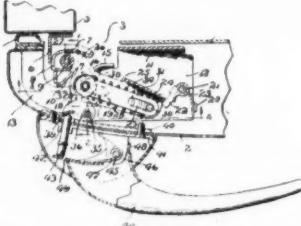
(Continued)

**2,444,124. METHOD OF FREEZE-DRYING REGENERATED CELLULOSE.** Frederick C. Wedler, Media, Pa., assignor to American Viscose Corp., Wilmington, Del.



1. The method of manufacturing dimensionally stable cellosic articles characterized by an extended porous sponge-like structure which is not materially altered by moisture, comprising drying moisture laden articles comprising freshly precipitated regenerated cellulose by exposing the article to a refrigerant at a temperature of at least 70 degrees C. below zero to quickly freeze substantially all of the water carried by the articles to the solid state, continuously drawing the article, while the water is still in the solid state, through a chamber, and subliming off the frozen water without liquefaction thereof by application of vacuum to the chamber.

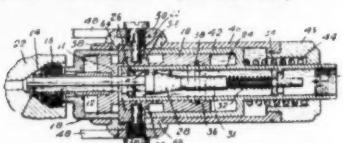
**2,444,180. LATCH.** Lloyd L. Anderson, Grand Rapids, Mich., assignor to Winters & Crampton Corp., Grandville, Mich., a corporation of Michigan. Application May 28, 1945, Serial No. 596,165. 9 Claims. (Cl. 292-332.)



1. A latch structure comprising a housing having spaced apart sides connected at one edge by a cross web, a latch bolt pivotally and slidably mounted on and located between the sides of the housing, spring means including a bar pivotally and slidably mounted on the same pivot as the latch bolt, said latch bolt and bar having slidable connections for relative longitudinal movement of one with respect to the other, means carried by said bar, and cooperating means on said housing whereby when the latch bolt is swung about said pivot it is held in a cocked retracted position in one position thereof, and in another position is swung about said pivot and said bar moved longitudinally relatively to the latch bolt, and a spring actuated member acting upon said latch bolt for normally holding it in extended position but yieldable to permit longitudinal movement of said latch bolt, as and for the purposes specified.

Week of July 6

**2,444,414. FLUID COUPLING.** Eric Martin Anderson, Westbrook, and Beecher Olen Kelso and Clarence Milton Ginn, Portland, Maine, assignors to Utilities Distributors, Inc., a corporation of Maine. Application Sept. 27, 1946, Serial No. 699,796. 13 Claims. (Cl. 284-18.)

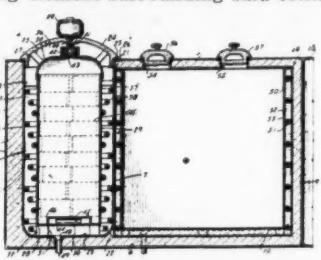


1. A detachable fluid valve-coupling unit having, in combination, a housing, an expandable gripper carried by the housing for gripping engagement with the internal periphery of the nipple to be coupled, a device for expanding said gripper, a fluid shut-off valve in the housing, a manually operable control element movable between an off and an on position, and means rendered operative by movement of said element for expanding the gripper to grip the nipple and to open the valve.

**2,444,489. APPARATUS FOR FREEZING AND STORING FOODS.** Chester A. Baker, Glen Ridge, N. J., assignor to Baker Ice Machine Co., Inc., Omaha, Neb., a corporation. Application June 17, 1944, Serial No. 540,766. 10 Claims. (Cl. 62-102.)

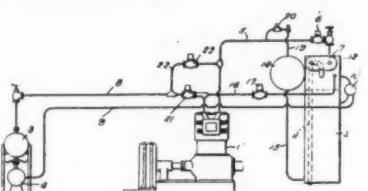
1. In an apparatus of the character

described, a quick freezer including an article container having an opening in the top and a perforated bottom, a refrigerating element surrounding said container



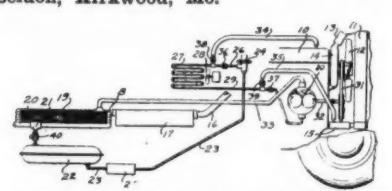
intermediate said opening in the top and the perforated bottom, means for withdrawing air from the container through the top opening and discharging the air downwardly under substantial velocity into contact with the refrigerating element, and means for diverting the air for discharge into the container through the perforations of the container bottom.

**2,444,514. TUBE-ICE MACHINE USING COMPRESSOR TO REVERSE PRESSURE.** Benjamin F. Kubbaugh, Louisville, Ky., assignor to Henry Vogt Machine Co., Inc., Louisville, Ky.



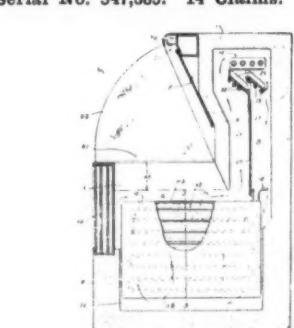
1. In a system for freezing ice, a condenser, an evaporator, a vessel in said evaporator in which ice is frozen and from the surface of which it is thawed following freezing by replacement of liquid refrigerant in said evaporator by hot gaseous refrigerant under pressure, a displacement vessel connected to said evaporator into which the liquid refrigerant is evacuated, a compressor, conduits between said compressor and said condenser and evaporator, a conduit between said displacement vessel and the suction side of said compressor, valve means controlling said conduits, means for periodically operating said valve means to cause said compressor alternately to pump from said evaporator to said condenser and from said condenser to said evaporator, defining successive freezing and evacuation phases, and to open said displacement chamber conduit to the suction side of the compressor at the beginning of the evacuation phase and close it at the beginning of the freezing phase.

**2,444,537. AUTOMOTIVE AIR CONDITIONING APPARATUS.** George E. Seldon, Kirkwood, Mo.



1. In combination with an internal combustion engine, air conditioning apparatus comprising a high capacity compressor arranged for operation by the engine, an evaporator coil connected to the suction side of said compressor, an expansion valve connected to the inlet of said evaporator, a condenser connected to the pressure side of said compressor, a tube for draining condensed moisture from the exhaust of the engine, a water tank connected to said condenser and said tube for collecting moisture therefrom, and a connection between said tank and said expansion valve to complete the refrigerating circuit.

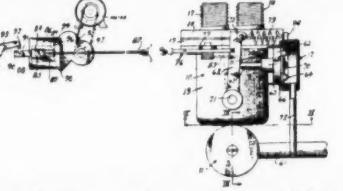
**2,444,593. AUTOMATIC TEMPERATURE CONTROL FOR REFRIGERATED OPEN-TOP DISPLAY CASES.** Russell E. Davis, St. Louis, Mo., assignor to Hussmann Refrigerator Co., a corporation of Delaware. Application July 31, 1944, Serial No. 547,385. 14 Claims. (Cl. 62-6.)



1. A refrigerated display case having a lower display chamber and an upper

chamber in continuous communication therewith, and a refrigerating circuit of the compressor-condenser-expander type including a motor for operating the compressor, an expansion coil in said lower chamber and an expansion coil in said upper chamber, a thermostat responsive to a predetermined temperature in said upper chamber for starting said motor, and a second thermostat responsive to a predetermined temperature in said lower chamber for stopping said motor.

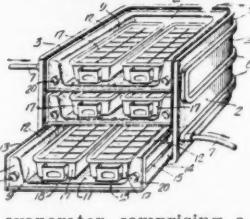
**2,444,631. MIXER VALVE AND CONTROL.** Thomas B. Chace, Chicago, Ill., assignor to The Dole Valve Co., Chicago.



13. A fluid control means comprising an automatic temperature control mixer valve having a plurality of inlet ducts adapted to receive fluid at different temperatures, a mixed fluid outlet duct, an adjustable temperature responsive element controlling fluid flow through said inlet ducts to maintain a desired temperature of the mixed fluid, fluid pressure responsive means for changing the setting of said element, conduit means communicating between said

last mentioned means and said mixer valve, and cyclically operable valve means, independent of said element, directly controlling the flow of fluid through said conduit means, thereby selectively energizing said fluid pressure responsive means according to the cycle of operation of said valve means.

**2,444,824. REFRIGERANT EVAPORATOR.** Russell M. Hall, Philadelphia, Pa., assignor, by mesne assignments, to Philco Corp., Philadelphia, Pa.

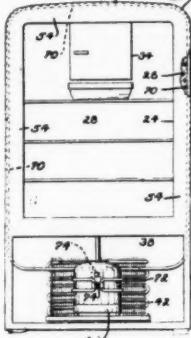


1. An evaporator comprising a housing structure including refrigerant flow channels, and a plurality of shelves detachably mounted in said housing and acting jointly to shield substantially the entire inner surface of the housing against exposure to moisture and resultant rapid frost accretion.

**2,444,667. REFRIGERATING APPARATUS.** Lawrence A. Philipp, Detroit, Mich., assignor to Nash-Kelvinator Corp.

Refrigerating apparatus comprising a

cabinet having a casing, said cabinet having an opening, a door for closing said opening, a unitary refrigerating system in



cluding a refrigerant evaporator, a condenser and a motor compressor unit removably mounted in said cabinet, a closed refrigerant containing system having a portion secured to said casing about said opening and two U-shaped portions arranged with one U-shaped portion being positioned on one side of said unit and the other of said U-shaped portions being positioned on the opposite side of said unit and a removable clamp engaging said U-shaped portions to removably hold said portions in engagement with said unit.

(To Be Continued)

## CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$2.50 per insertion 50 words or under. 5¢ ea. additional word.

RATES for all other classifications \$5.00 per insertion 50 words or under. 10¢ ea. additional word.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other addresses by actual word count. Please send payment with order.

### POSITIONS WANTED

SELECTED GROUP of men, graduates of well-known trade school, desire employment in refrigeration field. Will travel anywhere. Qualified in domestic and commercial refrigeration. Reliable Placement Dept., EASTERN TECHNICAL SCHOOL, 888 Purchase Street, New Bedford, Mass.

MAN WITH thorough knowledge and 20 years experience in all phases of refrigeration, heating, air conditioning, electrical and mechanical installation and service. Graduate electrical engineering. Own business three years. Former factory service representative for Airtemp. Prefer position as factory service manager or plant maintenance supt. BOX 2942, Air Conditioning & Refrigeration News.

POSITION WANTED as general manager or works manager for small to medium size manufacturer of refrigeration, heating, transformers or other electrical equipment by graduate electrical engineering, age 39, with 20 years experience all phases of above lines and executive ability in administration, production and distribution. BOX 2947, Air Conditioning & Refrigeration News.

GRADUATE MECHANICAL engineer, age 29—married. Broad factory and field experience in sales, engineering, application, and installation. Willing to work, will accept responsibility. Desire permanent position with established concern providing attractive future in air conditioning or commercial refrigeration. Write for complete qualifications and references. BOX 2950, Air Conditioning & Refrigeration News.

SERVICE AND installation man for domestic and commercial. Technician's rating in air conditioning and refrigeration, with three years experience. BOX 2951, Air Conditioning & Refrigeration News.

### POSITIONS AVAILABLE

SALESMEN: AIR conditioning, commercial refrigeration, ice cream and custard freezers. Top national lines. Men interested in over \$10,000 annually. DRESCO REFRIGERATION COMPANY, 4404 Woodward Avenue, Detroit 1, Michigan.

AIR CONDITIONING engineer—graduate of mechanical engineering between the ages of 35 and 45 with a minimum of five years practical experience who can take full responsibility for estimating, engineering, and over-all supervision on air conditioning applications up to 50 tons. The Advertiser is well established, well financed, and distributes top ranking equipment in the Baltimore area. Give full details in first letter with photograph if possible. Salary will be commensurate with ability. Interview will be given.

Interview will be commensurate with ability. Interview will be given.



## Refrigerator Demand In Venezuela Set At 7,500 Domestic, Commercial Units a Year

By Eugene Hesz, International Market Analyst

The population of Venezuela numbered about 2,400,000 in 1920 and it has since increased to more than 3,500,000.

In the last two decades, the growth of the large cities has been out of proportion to that of the smaller communities. Caracas has now in excess of 200,000 inhabitants and Maracaibo better than 100,000.

This is partly a mirror of the rapid advancement of the oil industries, with the accompanying "industrializing" effects.

In order to find out in which direction our merchandising efforts should be directed and what might be expected of the future, it is necessary to look at the economic division of Venezuela.

The country has four main regions. Only one of these is densely populated. It is that part which contains the northern end of the Andes mountain chain, imprinting its character on the eastern and northeastern sectors.

Quite a number of the main settlements are carried by these mountains or hills, at an altitude of near or above 3,000 ft. above sea level.

The cities of Caracas and Valencia are situated on the central highlands. The northeastern section borders on but does not contain Maracaibo, where the main oil lands are found. The two other mountainous regions are well populated but of secondary importance.

The greatest part of the lowlands of Maracaibo forms a region of its own in the West and constitutes the second section of Venezuela outstanding for its aggressive development in the last 25 years. The third sector is formed by the "enlarged" Orinoco basin, now coming of age.

The fourth sector is formed by the southern part of the country—the thinly-populated Guiana Highlands. This part is potentially very interesting on account of vast ore reserves, which have been verified.

Since it is essential that the engineer and sales executive looking for business in this part of the world obtain a detailed knowledge of its characteristics, it may be emphasized that excellent literature has been published on the subject in this country. Particularly good is the geographic handbook "Latin America," by Preston E. James, of the University of Michigan (also one of our sources).

Let us now consider the outstanding features of these trading areas.

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enormous quantities of iron ore, estimated at over a billion tons of ore, are waiting for things to come.

If we look at the dwindling iron reserves in this country, the outlook is rather promising, even if our first steps to foreign sources might be directed toward Canada, which has easier access to American industry. A large American steel company, however, taking no chances, has already acquired an extensive tract of land containing iron ore.

It has been shown that the economy of Venezuela is exceptionally healthy and that the climatic conditions are crying for artificial help to improve living conditions and preserve food.

In order to obtain an idea of the size of the markets, the following table is given showing past United States exports. Practically all imports shown, came from the United States.

### Venezuelan Imports of Refrigeration Equipment

Year	Household Units	Commercial Units	Refrigerator Parts (In Dollars)
1939	4,737	718	33,437
1940	6,181	860	50,944
1941	5,217	656	41,295
1942	818	424	19,291
1943	1,069	59	10,665
1944	117	102	14,866

These figures show clearly an expanding market, but at the same time, that the demand during the war years simply could not be filled.

What, then, about market potentialities?

The country has about 90,000 homes and small businesses wired for electricity. Caracas is adding 1,000 homes yearly.

Eighteen months ago, 35,000 domestic refrigerators were in use in

the country. Replacements should approximate 3,500 units per year plus 3,000 new purchases. Thus the annual demand may be about 6,500 to 7,000 units.

The country will need at least 1,000 commercial refrigerators per year, of which about 60% will be counters and reach-in and walk-in cabinets and 40% miscellaneous coolers. For spare parts, a yearly business of over \$50,000 seems certain.

American exporters will have to guard the odd frequencies of electric current and will have to provide for motors accepting such irregular conditions.

An extensive program to improve Venezuelan agriculture and provide the public with adequate food at reasonable prices has been undertaken by the Venezuela Basic Economy Corp., a new subsidiary of the Rockefeller International Basic Economy Corp. The new corporation has a capital of \$40,000,000 and will create new enterprises for the modernization of Venezuela's food industry and the checking of inflationary trends.

Creole Petroleum Corp. planned to subscribe \$8,000,000 for this project. The Shell group in Venezuela is pledged to a combined investment of \$5,000,000. An additional \$7,000,000 will be made available by other oil companies with interests in Venezuela. Other United States corporations also are expected to subscribe.

The new corporation will be controlled by Nelson Rockefeller and his brothers. New companies to be created in Venezuela will introduce U. S. food processing techniques.

The Venezuelan government will invest in related projects such as, for example, road building projects to facilitate the transportation of food products to markets.

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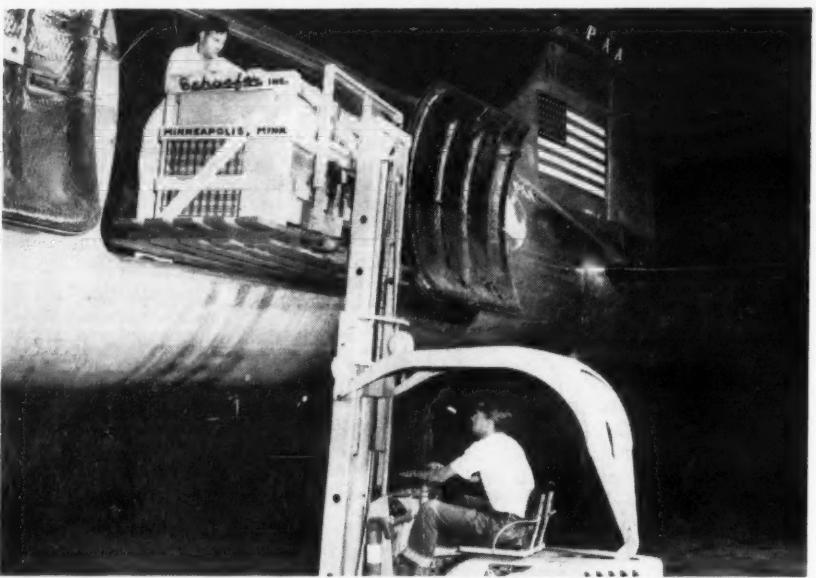
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BUSINESS NEWS PUBLISHING CO., 450 W. FORT ST., DETROIT 26, MICH.

## Ice Cream Cabinets Take to the Air



When the Mt. McKinley Ice Cream Co., Fairbanks, Alaska, needed five Schaefer "Clearview" packaged ice cream and frozen food cabinets in a hurry, the order was shipped via air freight from Seattle by Monroe Dairy Machinery, Inc., Schaefer distributor. In a few hours the cabinets were in operation in Fairbanks. The freight charges for what was believed to be one of the first air shipments of ice cream cabinets came to nearly \$800.

## N. Y. Dealer Groups--

(Concluded from Page 1, Column 2) the new organization, which will be known as the Metropolitan Council of Appliance Dealers

He explained that approval by the full memberships of each of five autonomous associations which will comprise the central organization is necessary before it can become operative. These groups, with a total membership approximating 2,500 dealers, are: Queens Electrical Appliance Merchants Association; Television, Radio & Appliance Dealers Association (Brooklyn); Bronx Radio & Appliance Dealers Association; Staten Island Electric League; and Westchester Gas & Electric Appliance Dealers Association.

The following temporary officers of the council have been elected: Theodore A. Reina (Brooklyn), chairman; Marino Jeantet (Queens), secretary; Joe Giulia (Westchester), treasurer.

Manhattan dealers have no trade association but will be represented in the over-all organization.

Asserting that approval by individual group memberships was virtually assured, Nierenberg pointed out that it was at the insistence of all dealers involved that 20 representatives of all five associations met recently to consider formation of a central trade body. Those taking a leading part in the initial organizational steps included Theodore Reina, president of TRADA; Marino Jeantet, secretary of QUEMA; and Joseph Giulia, a director of the Westchester group.

Nierenberg said it is hoped eventually that the new organization will represent dealers throughout the entire metropolitan area. Invitations asking delegates to attend an organizational meeting Sept. 29 at the Hotel Adams were sent to dealer associations in Nassau and Suffolk counties. New Jersey and Connecticut groups will be asked to participate.

Most local dealers, according to Nierenberg, feel that a strong central organization is necessary to effectively discuss industry problems with manufacturers and distributors and to present retailer grievances to them. He declared that more can be gained in this manner in the way of improved conditions than from a continuation of quarrels and fights."

While no specific complaints will be presented to manufacturers and distributors by the new association as such for the present, Nierenberg said individual dealers seek to have the following practices eliminated by securing cooperation of suppliers: (1) price cutting of fair-traded merchandise and (2) raising and lowering of appliance and radio prices by manufacturers without sufficient notification for dealers.

## F. J. Van Pelt Represents Westinghouse Appliances

MANSFIELD, Ohio—Frank J. Van Pelt has been appointed factory representative in the central district for household refrigerator sales of the Westinghouse Electric Appliance Division.

Van Pelt was dealer coordinator for the Ohio Edison Co. at Akron, Ohio, where he was employed for 18 years. As factory representative for the Westinghouse household refrigerator line, Van Pelt will carry on his dealer contacts.

## Milk Cooler Standards--

(Concluded from Page 1, Column 2) regulations for graded milk, design of the cooler, storage time, milk can size, pick-up or delivery schedule, milk handling methods, and regulations of milk plants or processor.

It was felt necessary that manufacturers published ratings should cover cooling range and time under each of the following three conditions:

1. When the producer cools the evening milk, holds it in storage until the morning milk is placed in the cooler, the morning milk being set out for a short time until it is picked up or delivered by or to the processor.

2. The producer who cools and stores both evening and morning milk; in this case efficient storage must be provided for all of the milk produced since pick-up or delivery time is delayed too much to permit the evening milk to be set out of the cooler.

3. The producer who needs to cool and store the evening milk only since the pick-up or delivery time is immediately after the morning milking and does not permit cooling of the morning milk.

Consideration was not given to the cooling problem in dairies or milk plants where pasteurization precedes the initial cooling, nor does it attempt to cover any other cooling of the milk where other than initial cooling immediately after milking is required.

Sales of milk coolers for the year 1947 were estimated in the neighborhood of 50,000 units with an estimated market for 60,000 in 1948.

J. E. Wilson, Jr., of Wilson Cabinet Co., has been named chairman of a membership committee to invite other milk cooler manufacturers to membership in this section with J. K. Noel, Jr., also serving on the committee.

Next meeting of the Milk Cooler Section was set during the Rema-Rewa joint meeting in French Lick, Ind., Oct. 20-22.

## Air Conditioning Contractor Trains Textile Plant Men In Equipment Care

WINSTON-SALEM, N. C.—The Bahnsen Co., air conditioning engineers and contractors here, is launching a new type of program in the field of customer relations with a series of classes for textile mill maintenance men on proper care of air conditioning systems in the mills.

On Aug. 25 a letter was addressed to some 50 mills in the southeast where Bahnsen equipment is in operation. The contractor's letter read in part.

"We have been long faced with the problem of transmitting correct information to your maintenance engineers. It has been the practice in the past to submit publications to the mill, but we doubt very much whether the operating engineer and the maintenance men have either the time or the opportunity to read this information.

"Therefore on this basis, we are proposing a class for operating and maintenance engineers so that we can give them a full-time opportunity to take advantage of learning about the equipment they are operating.

"We feel that this will pay dividends in two directions. It will give you the opportunity to be assured of satisfactory operation of the equipment that you have bought together with the fact that it will enable us to be assured that the equipment will operate to the peak of efficiency.

"We are proposing these classes to run for two weeks duration, one week

to be a duplicate of the other, thus it will enable you to send two groups of men to the same class without disrupting your entire organization."

There will be two complete classes of one week each. The first class is scheduled for Oct. 4-8; the second, Oct. 11-15. Registration so far indicates that there will be 50 operating engineers and maintenance men from the mills attending the first class, and 45 attending the second class. The classes will be held in the Robert E. Lee hotel in Winston-Salem with instruction periods planned from 9:00 a.m. to 5:00 p.m. each of the five days to be followed by a two hour discussion period in the evening.

Three general topics will be covered in the classroom periods: "Refrigeration and its Component Parts, Air Distribution and its Component Parts, and Controls." Specific subjects under these three general headings will be taught by Bahnsen engineers and representatives of the various companies whose equipment is used in Bahnsen installations.

The following companies will have representatives present to discuss their products: Worthington Pump & Machinery Corp., Wheeler Cooling Tower Co., Westinghouse Electric Corp., American Air Filter Co., Sporan Valve Co., Minneapolis Honeywell Co., Johnson Service Co., Buffalo Forge Co., Standard Oil Co., and R. K. Hunter Co.

In addition to specific product

discussions, Bud Nelson, business representative of AIR CONDITIONING & REFRIGERATION NEWS will speak. F. Boxall of The Bahnsen Co. is scheduled to speak on the subject of "Water," and show a new General Electric film entitled "Clear Water," which was taken in North Carolina. There will also be a discussion and outline of the objectives and aims of the Refrigeration Service Engineers Society.

Each class will conclude with a banquet on Friday evening with a prominent speaker on the program. Tentative arrangements call for the appearance of one of the South's best known humorists at these two affairs. The only cost involved will be the living expenses of the men who are present.

## Arizona Hardware Will Distribute Admiral Line

CHICAGO—Appointment of The Arizona Hardware Co., Phoenix, Ariz., as distributor of Admiral appliances and radios, has been announced by W. C. Johnson, general sales manager of Admiral Corp.

Manager of The Arizona Hardware Co., which was organized in its present form in 1938, is Thyrle H. Stapley, who is assisted by Glenn A. Jones. General sales manager in charge of the 24 field representatives is Fred C. Mehl.

Lenerd Fisher, manager of the appliance department, has been put in charge of the sales promotion campaign for Admiral products throughout Arizona, and will be responsible for all phases of dealer operation and cooperative advertising.



*A Good Question*

AIR CONDITIONING & REFRIGERATION NEWS, MARCH 31, 1947

## Will Inventories Become a Major Problem To Refrigeration Parts and Equipment Wholesalers?

**CHICAGO** Do refrigeration parts and equipment wholesalers have inventories that constitute a critical problem at this time?

The situation is not clear, but

wholesaler's inventories become a major problem in 1947?

"For the past few years

all lived the life of Riley, sales and inventories.

Sales were good, but inventories

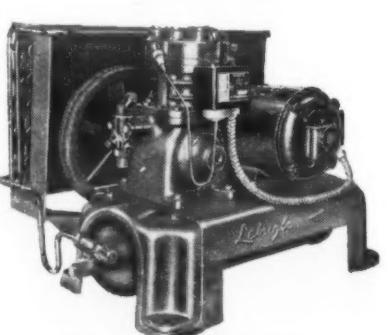
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